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Clinics from Barnard Cancer Hospital

The October Number of the *Surgical Clinics of North America* is from the Barnard Free Skin and Cancer Hospital of St. Louis and is devoted entirely to the physician's ever-threatening problem—*Cancer.* The medical profession recognizes the need for constant vigilance in order to combat this scourge and to make progress in preventive efforts. Therefore, this number of the *Surgical Clinics of North America* is brought to subscribers as a means of stimulating this vigilance by putting into doctors' hands the latest knowledge of diagnosis and treatment—the combat weapons in the fight against Cancer.

The scope of this Symposium is broad. It gives practical, *really clinical* guidance aimed specifically at assuring earlier diagnosis and more effective therapy. The authority of this Symposium is especially notable, coming, as it does, from one of the leading Cancer Clinics in the United States.

The titles and authors of the 27 clinics included in this Symposium are listed on *page 3* of this issue of THE JOURNAL. This kind of clinical guidance—this actual postgraduate teaching is indicative of all numbers of the *Surgical Clinics of North America.*

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THE ROLE OF THE GENERAL PRACTITIONER

CHAIRMAN'S ADDRESS

J. CRAIG BOWMAN, M.D.
UPPER SANDUSKY, OHIO

Events on the home front in the last three years demonstrate more clearly than ever before that the general practitioner is still the central figure of American medicine.

COLLECTIVISM VS. AMERICANISM

We general practitioners, by virtue of our training, diagnostic services and analytical inclinations, are well equipped to help lead this country out of its economic and social maze. To do this best we must enter the lists first as citizens, and as doctors only when we can aid in the interpretation of the origin and the nature of the deteriorating social processes which are now plaguing this earth. We must come to the defense of those principles of government on which our fathers founded this nation. No other principles of government or system of medicine have ever succeeded so well. These principles, in recent years, have been challenged by those who would seek to give security against fear, want and sickness by taking from those who have and giving to those who have not. Those active in this movement fail to realize that these goals, which sound so attractive when they are defined by glittering generalities, can be obtained only through the redemption of man and never by the redistribution of what little real wealth is to be left in our land.

This strange ideology, entirely foreign to our country, is infiltrating itself into the muddled thinking of our people. We must recognize that, however attractive this sounds, social security demands that each citizen give up his individuality, his integrity, his intelligence and his independence in order that he may share in the redistribution of existing wealth. As biologists, we physicians know and must not hesitate to point out that nature has tried this pattern over and over again and has never produced anything more progressive than a colony of social insects—a heap of ants or a hive of bees. In terms of social progress, this biologic pathway has a blind ending. As physicians we must make our own patients see that social progress can come only as we emphasize the dignity of the common man, so that through variation in behavior this independence may here play its proper role in evolution.

HEALTH

The time has come for both the medical profession and the public to think more clearly about the relationship of the physician to the social order. Furthermore, it is important that the public begin to have a definite appreciation of both health and sickness.

Health is not negative. Health means more than simply keeping out of a physician's office. It is a positive condition of the body which gives us a long life of zest and buoyancy. Proponents of social insurance confuse, purposely no doubt, health with sickness and insist on labeling sickness insurance plans for indemnification in cash or in kind as health insurance, which they never are.

You and I, and every physician, have dedicated our lives to binding up the wounds and relieving the suffering of mankind. Advances in infant feeding and in immunization have made it possible to add a great many years to life expectancy in our time. These added years have brought upon us the added responsibility for the care of literally millions more who now suffer with degenerative diseases but who would have been dead long ago in another century. Likewise, as a result of this increase in life expectancy, we are confronted today with the ever increasing problem of the infirm aged. If society does not find a way to keep its old people healthy, alert and vigorous, the problem of their care threatens to break down completely the economic structure.

It is beginning to be appreciated that the chronically ill can only be repaired, never cured, even by the best of medical services. They cannot be restored to a truly healthy state. Modern science has done wonders in its attack on acute infectious diseases with serum and "miracle drugs." But those chronically ill with degenerative diseases can be treated only symptomatically and their lot made easier. This role of comforter, if it is to function at its best, involves the ideal physician-patient relationship.

MALNUTRITION THE CAUSE OF DISEASE

Medical research made one of its greatest contributions to human welfare when it began to produce positive evidence that improper or inadequate food, and a consequent state of poor nutrition, is the underlying cause of many diseases. Not only were organic diseases so identified, but poor nutrition was found to interfere with the proper working of the bodies of man and his animals.

Sickness produced by deficient foodstuffs was found, for the most part, to be chronic and crippling in character to both mind and body. We are coming to realize that chronic sickness due to faulty nutrition is the largest single factor in the lives of literally millions of the people who consult us but who do not, however, exhibit organic disease. They are simply poorly nourished and do not have their natural vitality. They have little or no vigor. They do have, as a consequence, an increased susceptibility to all kinds of infections and degenerative diseases. How to restore these chronically half sick people to robust health before it is too late is a fundamental social problem.

Read before the Section on Miscellaneous Topics, Sessions for the General Practitioner, at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 14, 1944.

This problem is not one of the redistribution of pills. It makes little difference who gives what colored pill to whom. What I am trying to say is that no plan of voluntary or compulsory sickness insurance will solve this problem. It is purely a matter of prevention through education, and sound nutrition and proper eating must become popular through education.

Let me illustrate what I mean by the studies which have been made on the Cincinnati Negroes. In the slum areas where the food supply, food preservation and food habits are all bad, they die like flies from rheumatic fever, tuberculosis and other diseases brought on by lowered resistance. In a Negro suburban village, under the average suburban standards of living, the relatives of these same Negroes die at the same rate and with the same diseases as do the white people of the neighboring town. Now one is particularly interested in the health problem of an individual colored citizen in these slums. Nutrition remains a personal matter. Once, however, his malnutrition has lowered his resistance and he is attacked by tuberculosis, then he is taken to a magnificent institution with marble halls. Doctors and nurses are provided in abundance to study his "case" and to serve him. Too often it is too late! The farm crops that we didn't raise and the milk that we didn't produce would have prevented him from ever getting tuberculosis in the first place. Prevention is the thing that is needed in meeting these problems, and the best preventive is good nutrition.

Or again—let me illustrate this point that much of the chronic half-sickness and of our disease is the result of malnutrition for which the medical profession cannot be blamed. Furthermore, any attempt to meet this situation on a nationwide scale with so-called adequate medical care will certainly bankrupt our economy. And the sad part of it is that there will be just as much sickness at the conclusion of the experiment as there was at the beginning. You will recall that during the depression the Dental Society of the State of Pennsylvania offered to fill free of charge the cavities in the teeth of all the children whose parents were on relief. This was, indeed, a noble gesture on the part of those dentists, and it cost them an immense amount in time, money, material and energy. The cavities, however, continued to develop faster than the dentists could fill them. This was because the children weren't getting enough foods rich in calcium and vitamin D. They were not getting milk and sunshine. It is therefore to be hoped that public attention will not become fixed on some scheme for getting sick people to a physician, but rather that the public will realize that these undernourished people are sick and always will be sick with one disease or another as long as they live, unless their nutrition can be restored. Prevention, I must insist, is needed, and this is a task for all of Society and not a task for physicians alone.

OUR PATIENTS

Those of us who are engaged in general practice realize, as many other people do not, that some of the basic relationships which governed the art of healing, before the separation of medicine from religion, are still needed in the handling of sick patients. At least one half of the patients seen in the office of the general practitioner do not have the typical diseases that are described in our textbooks on the practice of medicine. They are, on the contrary, victims of functional disturbances and frustrations, which have come primarily from bad adjustments to environment, and are increasingly common in these days of perplexing social and economic stress.

These half sick patients demand something more than the right of the individual to select his own physician. They must, however, have this right and exercise it if they are to have confidence in their adviser. Such patients must develop a relationship which will inspire in them confidence in the judgment and advice of their own personal physician.

This is a challenge which we readily accept. In so doing we utilize our art and skill in such a manner as to bring the patient quickly to a realization that the doctor whom he has chosen as his physician and counselor has had intimate experiences in directing the lives of others and in helping them to sublimate their frustrations and to adjust themselves more satisfactorily to all the other problems which arise in life. To meet this challenge the general practitioner must continue to be more than a scientist—he must still be teacher, philosopher, counselor—friend.

PERSONAL PREVENTIVE MEDICINE

When one attempts to look into the future, it is difficult to see the end of present social trends. It is certain, however, that the practice of personal preventive medicine will become increasingly important. It will place greater responsibility on the shoulders of the physician in general practice. No health department or any other agency, regardless of how well it is manned or financed, can handle this completely. The host of procedures—immunization, vaccinations, examinations and analyses—that the alert citizen is supposed to have done for him even now is beyond the resources that are conceivable for any public health department. This requires a complete and mutual understanding and cooperation of the family physician and his families and opens a great field in personal preventive medicine. The public will be fully appreciative in every sense of these services if it is allowed to cooperate and understand.

SERVICE FOR THE RETURNING SOLDIER

Following the war—even before it ends—the medical profession will be confronted with the vital task of helping the millions of men returning from the service to readjust themselves to civilian life and to help restore them to physical and mental fitness. No one is so well fitted to help these men to make the necessary mental readjustments as the general practitioner.

After the war we shall need to have a knowledge of many strange diseases which the boys will bring back with them from many foreign shores. Many ex-service men will become institutionalized unnecessarily unless each one of us prepares himself to render the kind of service which these men will need and will want. The unusual mental impairments of sickness will make it imperative that these men get counsel and advice from some one on whose judgment they will rely and who is competent to analyze them as whole human beings, not simply as battle casualties—and a beautiful specimen for a case report. Psychosomatic medicine is a new name for this use of sound judgment and intelligent understanding of life that has always characterized the work of a good general practitioner.

CONCLUSION

Today we stand on the threshold of a new era in medicine—an era which offers a great challenge to any one in general practice. If the physician will continue to develop his relationship with his families along the

lines that I have tried to suggest in a general way, he will continue to render a distinct service to a large portion of our people. At the same time he will make a definite contribution toward molding the pattern of the future practice of the art and science of healing.

208 South Sandusky Avenue.

STANOCOLA MEDICAL CARE PLAN

JAMES M. ADAMS, M.D.
NEW YORK

The features of the Stanocola Medical and Hospital Association are as follows:

1. It was conceived and organized and is owned, supported and operated by employees.
2. Membership is entirely voluntary.
3. It supplies necessary medical, hospital and nursing services to employee members and to their families.
4. There is only one rate of dues, regardless of the number of dependents.
5. The medical staff is on salary and mainly on full time.

Although it is employee owned and operated, the company is much interested in its success and lends its support by:

1. Making payroll deduction of dues.
2. Permitting deduction of dues from the company thrift fund. This fund is supported by regular, voluntary contributions by employees and by the company. Dues collected from this fund, as 85 per cent of them are, represent both employee and company contributions. Through the medium of this fund, members of the association thus receive material help from the company in the payment of their dues.
3. The company has aided the association substantially by making a large donation toward the purchase of its clinic building and on other occasions made contributions for special purposes.
4. The board of directors of the association has always included two or more of the company's executives, elected by the membership.

The association is entirely distinct from the company's medical department, whose work is limited to industrial medicine—preventive medicine and the care of industrial injuries and diseases. It was organized and the collection of dues begun on April 1, 1924, and services were offered beginning July 1 of that year, so that it has now operated successfully for twenty years.

In the early 1920s the employees of the Standard Oil Company of Louisiana in Baton Rouge had suffered a reduction in income. At a general conference of representatives of the employees and the management, opinions were expressed by employee representatives that the cost of living in the city, which at that time was largely a single industry town, had not been reduced commensurately with that of the country as a whole or with their loss in income. Committees of employees were created to consult with various business and professional groups in the city seeking a reduction in prices and fees. Among these committees was one to consult with the medical society looking toward a return to the schedule of fees customarily charged prior to the war.

This committee was unsuccessful in its mission, and after many discussions an association was launched with the object of securing a reduction in medical costs. This was composed of 1,300 employees, who made an agreement with four physicians in the community to pay them a retainer of one dollar a year for each member. The four physicians divided this fund and agreed to treat the members and their families at one half the usual fees.

As was to be expected, this arrangement was unsatisfactory both to the members and to the physicians and the arrangement was not renewed after one year. The experiment served, however, as a basis for the promotion of the Stanocola Medical and Hospital Association.

At that time there were few organizations attempting to supply group medical service and no precedents to guide the founders, so that the project had to be inaugurated on a strictly experimental basis. There were then no Blue Cross Hospital plans, and in that area about the only group medical care was supplied by lumber companies to their employees, usually in isolated camps. Deductions from wages were compulsory and a doctor or doctors were employed by the companies to care for the medical needs of the employees and their families. In many instances the revenues from the collections were much greater than the expenses, and the companies were in effect practicing medicine for profit. Only the largest companies supplied hospitalization and then in hospitals of their own. The service was often inadequate and inefficient.

It was decided that 2,000 members would be a minimum for beginning operations, and after a thorough canvass of the refinery personnel the experiment was launched with 2,200 employees and their families participating. Arrangements were made with several private practitioners to treat the eligible beneficiaries, utilizing their own offices. Included in the panel were a surgeon, who served as medical director, and an ear, nose and throat specialist. After about six months of operation a group of offices for a clinic was rented and all physicians except the surgeon were placed on full time. Three years later the surgeon and medical director was employed on full time.

In 1931 the group, having outgrown its quarters, purchased a large residence in a convenient location and converted it into a clinic, which is still in use. The staff now consists of eleven doctors on full time and five on part time. Of the physicians on full time two are surgeons, one of them serving as medical director, a pediatrician, an ear, nose and throat specialist, an obstetrician and gynecologist, five general practitioners and one of the older physicians, who confines his work to anesthesia and office practice. One of the general practitioners, who also is one of the older men, is located in a nearby town and cares for the members residing in that immediate community. Of the part time physicians one is a roentgenologist, two are general practitioners in nearby towns and the other two are used for relief work in the pediatric service. Two of the physicians are women.

In addition to the medical staff, six nurses (two graduates and four nongraduates), two laboratory technicians, an x-ray technician, two office girls and a cleaning staff are employed in the clinic, and a couple living in the garage look after telephone calls when the offices are closed. Hours at the clinic are from 8:30 a. m. to 6 p. m.

The character and training of the medical staff are excellent. All physicians are graduates of approved medical schools and most of them have had postgraduate training. All are members of the American Medical

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Association and two are fellows of the American College of Surgeons.

There are seven suites of offices, most of them used by two physicians at different periods, and their hours are staggered so that there are always several on duty throughout the day. Each doctor has one day off each week. There are clinical and x-ray laboratories, physical therapy treatment rooms, and a pharmacy operated by a drug store chain which fills prescriptions at a 15 to 25 per cent discount. New x-ray equipment has just been installed, which includes in addition to the regular x-ray machine a fluoroscope and a wall dental unit.

Aid provided starts with medical and surgical services limited only by the capacity of the staff. Patients are treated in the clinic, in the hospitals or in their homes within a radius of 7 miles of the clinic, as indicated. Beyond the 7 mile limit a small mileage fee is paid by the patient to the doctor. Hospitalization is at ward rates except that private rooms are provided for contagious diseases and where privacy is a necessary part of the treatment. The general hospitals in Baton Rouge are used and accord special rates to the association. Special nurses are provided where they are considered necessary. Hospitalization and nursing costs are limited to $250 for each case. For those members who call a physician who is not on the association's staff, hospitalization and special nurses may be supplied up to the maximum at the discretion of the medical director. Hospitalization of normal maternity cases is not provided. However, on the advice of the association's obstetrician, practically all normal obstetric cases go to a hospital for delivery, with hospitalization costs at the patient's expense. Hospitalization and special nursing have recently been authorized outside the Baton Rouge area. Medicines other than those administered in the clinic are not supplied. Services are the same for employees and for their dependent families. Dependents eligible to services are limited to parents, spouse and children. Other dependent relatives may be included by the payment of additional monthly dues.

Dues were set in the beginning at $2 per month for each member. No distinction is made in dues for members with dependents from those who have none. The board of directors was authorized to make up to one assessment equaling a month's dues in each quarter. As it was found necessary to make a number of assessments regularly, dues were increased and are now set at $3 a month, with three assessments of $3 permitted during any one year. On an average two assessments are now being made annually, bringing the cost to $42 per member year or $3.50 per member month. It has been suggested that the dues should vary with the number of dependents and possibly with the income of the members. But the organizers wanted a fully cooperative association and considered the single rate to be as equitable as single rate group insurance premiums. It has also been suggested that the dues be increased to $3.50 per month, as that is the actual present cost. But the board of directors regards the present plan of dues with assessments made only as required as preferable. The x-ray department is supported separately from the other services, and assessments are made as needed for its maintenance. One assessment annually, included in the two mentioned, is usually sufficient. For employees who wish to enroll dependents other than parents, spouse or children, one dollar a month is charged for each such dependent.

In 1930 the association was incorporated as a nonprofit organization with capitalization at $100,000, represented by five thousand shares of stock at $20 each, every member being required to purchase one share of stock which may be paid for at the rate of $1 per month. These funds are for use for capital investments, improvements and new equipment. The stock carries no voting power and is of value only in the event of liquidation. All stock has now been subscribed, and an initiation fee of $20 is substituted and required of each new member.

The business management of the association is vested in a board of directors consisting of eleven members elected by popular vote for overlapping terms of two years. Eight are elected from specified groups of departments and the remaining three from the membership at large. Ever since the organization of the association, two or more members of the board of directors have been executives of the company elected by the membership at large. The professional direction of the staff is in the hands of the medical director and there is no interference from the board in any professional matters. The cooperation between the board as business managers and the chief surgeon as professional director has always been excellent.

Disbursement of Revenues

	Percentage of Revenues	Monthly Cost per Member	Monthly Cost per Beneficiary
Doctors' salaries	40%	$1.40	$0.36
Hospitalization	20%	0.70	0.18
Special nurses	10%	0.35	0.09
X-ray department	6%	0.21	0.06
General and administrative expense	18%	0.63	0.16
Other expense	5%	0.17	0.04
To surplus	1%	0.04	0.01
Total	100%	$3.50	$0.90

The expansion of services has been slow and careful. New ventures have been embarked on only after long and serious study. For example, when the x-ray department was inaugurated it was as an extra service and was supported by charges against the patients for x-ray examinations. As this plan was contrary to the strictly cooperative spirit of the association, it was decided by the membership to support it by assessments as required against all members and to make the service available without additional cost to those needing it.

During most of the period of its existence its membership has comprised 80 to 90 per cent of the eligible employees. It now numbers 4,600 members, with 18,000 persons eligible to services. The rapid increase in employment at the plant during the war period has posed a problem. Additions to and replacement of the medical staff have been almost impossible to secure because of the doctor shortage. In order to avoid contracting for more services than their available facilities will permit, new memberships are being restricted to employees with a year or more of service, and the regular staff has been supplemented by the part time employment of local private physicians.

The association now has assets amounting to $140,000, represented by real estate, equipment, war bonds and cash. It has been suggested that an organization with an annual budget of almost $200,000 should have a larger reserve for epidemics and catastrophes. Actually the amount of service rendered is strictly limited by the facilities available in the community and little more can be provided, regardless of the needs, than is now

being supplied. While the number of members has increased one third in the past two or three years, the increase in the amount of services rendered has been much smaller. In fact, special nursing services supplied were actually less in 1943 than in preceding years, simply because there were often no nurses available when needed. The flexibility of income resulting from the authority to collect assessments cares for normal fluctuations in costs, so that the financial structure seems adequate.

During the seven years 1936 to 1942 the revenues have been disbursed in average proportions shown in the accompanying table.

ADVANTAGES TO MEMBERS

1. The members of the association have adequate medical hospital and nursing care for themselves and for their families at a predetermined cost. The total cost is probably as great as if the group purchased the service individually; but they have probably received more service than they would have purchased as individuals.
2. They have been supplied with services at least the equal in quality of that otherwise available, and superior to that usually received by persons in the same economic group. They have had the advantage of much freer consultation with specialists than they would have had otherwise, and laboratory and x-ray examinations are more freely used.
3. They have escaped a not infrequent cause for strangling debt-large medical and hospital bills.
4. They have the satisfaction of providing this care for themselves and their families by their own efforts rather than having it handed to them.

ADVANTAGES TO THE EMPLOYER

1. Adequate medical care for the employee is provided, with return to duty with the minimum loss of time.
2. Close cooperation exists between the company's medical department and the employee's physician.
3. It is easier to persuade employees to have physical defects corrected than it would be otherwise.
4. Fraudulent claims of industrial injury are reduced.
5. The morale of the employees is improved by freedom from worry over costs of illness and by the satisfaction of providing such excellent medical care through their own efforts.

ADVANTAGES TO THE MEDICAL STAFF OF THE ASSOCIATION

1. The compensation is probably higher than the average in the community in normal times.
2. The inconvenience of carrying on an individual business is avoided.
3. Each physician has one day off each week and an annual vacation with pay.
4. Postgraduate training at the expense of the association is provided on occasions.
5. The close association and consultation with other physicians stimulates them to better work.

CONCLUSION

In 1932 a study of the association was made by Dr. Rufus Rorem of the Blue Cross Hospitalization program of the American Hospital Association, at that time representing the Julius Rosenwald Fund, and Dr. John H. Musser, professor of medicine at Tulane University and past president of the American College of Physicians. Their report was published in book form under the title "Group Payment for Medical Care" and approved the work of the association. Dr. Musser commented on the maintenance of the personal relationship of the physician and the patient. Free choice among the general practitioners is permitted, and the physician stands in the same relation to the patient as the "family doctor."

The association members, the management of the company, the company's medical department and the medical staff of the association are convinced of the value of the organization for this particular group. It is equally recognized that it is not necessarily the ideal plan for all groups.

Standard Oil Company (New Jersey), 30 Rockefeller Plaza.

VARIATIONS IN CURRENT INDUSTRIAL MEDICAL SERVICE PLANS

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BINGHAMTON, N. Y.

Industrial medicine is probably more widely practiced in the Binghamton area than in any other part of the country. For a number of years I have been medical adviser for several concerns in Binghamton and surrounding cities. While I have been associated with industrial medicine, I have also continued to maintain a private practice. This has enabled me to understand both sides of a subject which has made significant development in recent years.

At present I am medical director in six industrial organizations with a total of over 5,000 employees and about 2,000 dependents participating in prepayment medical care. I shall try to present a few of the details concerning some of the plans under my direction.

In 1913 a Mutual Benefit Association was organized at the Dunn and McCarthy shoe factory by the employees. Sickness and death benefits were provided. Later a registered nurse was hired and a complete and well equipped first aid room was established. In 1916 I was employed as the company doctor to conduct a clinic every morning and to visit sick employees at their homes. There were 1,200 employees at the time. The company contributed 50 cents for every dollar contributed by the workers. In 1923 the firm started contributing dollar for dollar, and new services were added. This association gradually expanded until we now have a fairly complete coverage of the medical, hospital and dental needs of the members. In 1928 care for dependents was instituted. The benefits for dependents include major and minor operations, hospitalization at ward rates, laboratory and x-ray service and care of fractures. There is a limit of $250 to be spent per contributor annually for his dependents.

In paying for and drawing sick benefits, members are divided into classes according to their weekly earnings. Dues are 15, 20 and 25 cents a week, and 10 cents additional for care of dependents We feel that this method of contribution is most satisfactory because those in the lower income groups have an equal opportunity to share benefits with those in the higher income levels. It also affords those paying greater contributions sick benefits in proportion to their dues.

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Any employee may join the association, but he must pay dues for two months before he is entitled to benefits, six months to be eligible for hospitalization and operation, eye examinations, x-ray and extraction of teeth, and one year before receiving sick benefits when he is is operated on. No member can draw more than ten weeks' sick benefits in a year, and not more than $350 can be spent on any member in a year. This is a limitation placed by state law.

At Dunn and McCarthy's the twenty-two year average cost per employee was $18.53 annually; the sixteen year average cost per contributor for his dependents was $13.43; the cost per dependent was $5.17 a year. These figures are significant because they furnished a basis for the organization of other mutual benefit associations in other industries. There are many ramifications to the Dunn and McCarthy plan which I have not time to go into here. It is based primarily on the contract method of practice. The workers are allowed to choose their surgeons, specialists and dentists.

In 1930 a benefit association was organized at the Spaulding Bakeries plant in Binghamton. This plan was later extended to the other Spaulding plants in New York State and Pennsylvania. Originally this association was organized on a contract basis. After two years the question arose as to whether it would be possible or feasible to allow the employees the freedom of choice in the selection of their physicians. It was found that, although some of the members paid dues in the association, they continued to go to their own physicians. The officers of the association sensed a tremendous advantage in the personal relationship which exists between a physician and his patient and the desirability of maintaining that relationship through the association. It was decided to try giving the members the right to choose their physicians. We were pioneering and had no assurance what the outcome would be. The reorganization of the association under the new principle succeeded beyond our hopes. It was proved that the principle of freedom of choice was the ideal setup. The doctor himself now had a stake in the success of the plan, and the patient knew the limitations. The doctor knew that he would get paid for the services he rendered and he knew there were limits to what the association could afford to pay. We believe, after considerable research, that the Spaulding Employees' Mutual Benefit Association was the first to establish the fact that complete freedom of choice was workable and effective.

The average annual cost per member in the Binghamton plant for eleven years was $26.77, for nine years in the Elmira plant $24.73, for eight years in the Oneonta plant $14.94, for eight years in the Wilkes-Barre plant $14.93, and for seven years in the Middletown plant $19.30. The average annual cost per member in the five plants was $20.13.

In the Binghamton plant we have limited care of dependents. This care includes house and office calls, x-rays and laboratory fees. The average annual cost per contributor was $19, and $9.40 per dependent. There is a limit of $50 a year to be spent in any year per contributor for his dependents. Dues are 25 cents a week per contributor.

The success of the association at Spaulding's led to the organization in other local industries of other associations based on the same general form. In some instances it was the result of employees asking their employers for a plan for prepayment medical care. Probably the most convincing evidence of the value of medical departments in industry is the fact that where these departments have been established they continue to exist and to increase in usefulness. Employers and employees soon realize the advantages.

In 1929 the Ansco Corporation organized a mutual benefit association, which operated for four years on a contract basis. The success of the Spaulding Plan under freedom of choice led us to adopt the same principle at Ansco in 1933. The company contributed 50 cents for every dollar contributed by the employees.

In February of 1943, because of increased costs of hospitalization, dues had to be raised from $1 a month to $1.25. The company agreed to contribute 75 cents a month for each member. With the increase in dues, x-ray and extraction of teeth were added to the benefits and $4 a day was allowed for hospitalization instead of the $3 originally allowed. We found that, with the added income, expenses were less than anticipated, so on Nov. 1, 1943 we increased the allowance for x-ray and laboratory and gave sick relief when the patient was operated on or hospitalized. The total allowance to be spent per employee annually was increased from $250 to $300.

Ozalid Products Division was incorporated into the Ansco Association in 1941. Benefits in these associations now include major operations with an allowance of $100, minor operations up to $50, tonsil operations $40, hospital, with a thirty day limit, $4 a day, anesthetic $5 to $15, operating room fee $5 to $20, ambulance $6, laboratory $20 a year, electrocardiographs $30 a year, consultations $10 a year, x-rays $40 a year, surgical office calls $50 a year, refractions $5 a year, x-ray and extraction of teeth $25 a year, $3 allowance for house visits and $2 for office visits with a limit of $30 to be spent annually. For oxygen and transfusions there is an unlimited allowance. Benefits of $10.50 a week or $1.50 a day are paid after seven days of illness for not more than seventy days a year; after seven days' hospitalization for not more than thirty-five days. There are over 3,000 members participating in the Ansco Mutual Benefit Association. The average annual cost per member for an eleven year period was $18.25.

In March 1944 we added care for dependents at Ansco. The dues are $1.50 a month. Wives and dependent children under 18 years of age are entitled to major and minor operations, hospitalization for thirty days a year at $2 a day, care of fractures and maternity care. We placed a limit of $40 for doctor's fees for maternity care, plus the allowance for hospitalization. Dependents of members who enter the armed forces will be eligible for benefits, provided the monthly dues are paid.

During 1943 the Ansco Mutual Benefit Association paid 147 doctors in sixty-seven different cities and fifteen different states. This was in addition to the 102 doctors used in the city. Hospitalization was provided in twelve different hospitals and the employees used 33 dentists out of town and 23 in town.

Our policy has always been to extend benefits rather than to reduce contributions as funds accumulated. In all the associations the members are asked whether they wished to contribute additional amounts for additional services. In all cases of extension of benefits and additions to dues the members have voted for it by a large majority.

The smallest mutual benefit association is at the Binghamton Die and Machine Company, where there are less than fifty employees. This association has been

operating successfully since Jan. 1, 1937. Coverage is practically the same as in the larger associations. The average annual cost per member for the seven year period was $17.97.

The newest association is at the H & A Manufacturing Company. This went into effect on May 1. It is different from the other associations in that the employer is paying the entire cost.

The expenditures in each association vary but little. These variations are determined by the length of time the association has been in operation, the number of employees and the size of the contributions of the employer and employee.

The real measure of any plan is not its good intention but its actual achievement. The associations in which freedom of choice is practiced are working with amazing success. We have developed a plan that is equally acceptable to physician and patient. Members can select from the outstanding physicians in the community. We know that individual attention by a skilled and interested physician is the best type of medical care.

Our experience indicates that with proper administration and with cooperation between the associations and the medical societies this type of service to the worker can be provided in industry on the basis of complete freedom of choice of physicians. It is evident that from small beginnings the mutual benefit associations grow rapidly to provide a more varied and more complete medical coverage.

One great advantage in our plan is that it can readily be adapted to every kind of industry, with the costs set at a point where the plan may operate successfully.

It has been thoroughly established that the people are interested in prepaying their medical costs. The costs of medical care should be distributed among groups of people and over periods of time. Americans cherish the right to exercise their free will and judgment. There must always be this right if American medicine is to advance in the future as it has in the past.

Freedom of choice of physicians is to be preferred to the contract or panel method. The patient receives attention without delay because all physicians in the community are available. Illness comes under skilled observation and much sooner than would be the case otherwise. Clinical methods are more widely used, and accurate diagnosis is more readily established. X-ray, laboratory and specialized services are available to those who otherwise could not afford them.

Under freedom of choice, the principles on which the practice of medicine were established have remained intact. There is better relationship between doctor and patient, a greater degree of cooperation in the medical profession and a greater feeling of good will between employer and employee.

Many attempts have been made to give adequate and efficient medical service and to make it easier for those of modest means to pay for this service. We physicians are sympathetic with efforts to improve conditions and deeply concerned with any attempt to change the fundamental basis of our work, but we must realize that, with the advances in medical science, other advances are being made. The maintenance of a strong medical profession is in the public interest. We must increase our efforts, because the physician has no more important obligation today than to assume a place of leadership in solving the economic and social problems bound up in the practice of medicine. The economic organization of medical care is now undergoing changes of great scope and magnitude. These changes are partly because of the growth of public sentiment that health is a matter of social concern. Change based on anything but sound practices can result only in eventual detriment to the medical profession and the people.

My close association with industrial workers over a period of years has convinced me that they favor prepayment in order to free themselves of the worry of medical care. While industrialists have been willing to assume their part in the program of medical care, medical societies have been reluctant. These societies can efficiently handle the whole program. The medical profession will gain nothing and make no progress by working at cross purposes with the trend of the times or with the desires of the people. We must take an interest in medical economics and, through our medical societies, furnish the leadership necessary to make prepayment available to every one who wishes to participate.

110 Oak Street.

HEALTH PLAN PRINCIPLES IN THE KAISER INDUSTRIES

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OAKLAND, CALIF.

We have a fundamental concept. Though there are certain hazards and occupational diseases peculiar to industry, these are rapidly being eliminated and are actually minor problems superimposed on the general health problem of the worker and his family. Industrial health actually resolves itself to be not an entity but the basic health of the American people.

American medicine surpasses that of the rest of the world in technical excellence. So far a large portion of the American people have been denied this medical care. This lack of distribution has led to numerous experiments to solve the problem. During the last ten years some three hundred medical care plans have developed. This is a significant trend of vital concern to the medical profession. Most of these plans have one common characteristic — "prepayment." From there on they deviate widely in amount of coverage, financial structure, organization and ideals.

Groups of experts have developed—so-called authorities—who are found in government agencies, foundations and labor unions, among employers, insurance companies and public health schools. Most groups are trending toward a united front, completely bypassing the medical profession—the trend toward government tax supported medicine.

Now there appears to be a definite drive to forestall the threat of government intervention by medical society operated prepayment plans. The facts are that prepayment itself is not enough. The majority of prepaid medical plans to date have failed and proved totally inadequate:

(*a*) The insurance company indemnity plans provide only a minimum of service.

(*b*) The Blue Cross plans have only limited hospital care and in addition have a possibility of dominating the medical profession.

(*c*) The medical society plans have been miserable failures. Starting with comprehensive coverage, they have dropped back to limited benefits; they have not

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been supported by the physicians; they have created no facilities, have not raised the quality of medical care and are too expensive and do not provide for preventive medicine.

In short, in addition to prepayment there must be some semblance of organization in methods of providing medical and hospital care so that the prepaid funds will provide the necessary coverage and sufficiently remunerate the physician.

Ten years ago we started providing medical care with no preconceived ideas and no plan. We had industrial work to do in areas where no medical or hospital care existed. We tried the usual method of fee for service and soon discarded it. We could not provide the service on that basis and the people could not pay for it. Out of our necessity evolved a simple plan that works. We have tested it under all sorts of conditions and in many areas with small numbers of men and large numbers—with scattered groups and concentrated groups. I would like to present this plan for your consideration.

The plan embodies three major principles: (1) prepayment, (2) group practice and (3) adequate facilities.

Prepayment needs no elaboration and is generally accepted as the only way people of moderate means can pay for increasing costs of modern medical care—the principle of spreading the cost so that the well pay for the sick.

Group practice, the second principle, results in many economies, the most important economy resulting from the highest quality of medical care for each illness. Most highly developed in the very universities that teach us medicine, few will deny the advantages of group practice, its stimulation to the physician, its ready accessibility for consultation, its better supervision and utilization of the younger and inexperienced physician, its productiveness in research and training. In fact, most physicians today have an unofficial association with a group of doctors; but these groups are totally unorganized, inefficient and costly.

Adequate facilities, the third principle, are equally important. By adequate facilities I mean bringing the doctor's offices, the hospital, the laboratory and x-rays together under one roof. Where such facilities are geared to serve one particular group we achieve the utmost in efficiency and economy and the greatest accessibility between doctor, patient and workshop, with a resulting tremendous economy in saving of travel and duplication of equipment and personnel. That in essence is the plan. Consider these facts: Utilizing these principles in just a period of twenty months we have served the medical needs of 80,000 people in the Oakland area. Our income has been prewar income, the same cost to the worker and the employer that we charged five years ago. Contrary to what you may have read, the people we serve are not a selected group; they are the 4F's, the aged and the physically unfit. Many would be considered unemployable in normal times. Incidentally these men have done an outstanding job in shipbuilding. We have no preemployment examinations. The unions will not permit that—a rebound from the old days when such examinations were used to keep men from working rather than for proper placement. As a result we have had a tremendous medical load. We have provided these men with more medical and hospital care than has ever before been provided a similar group of people. Despite these facts, the tremendous medical load and wartime increases in expenses, we have been able to remunerate our physicians with incomes ranging from $5,000 to $15,000 a year net. We have been able to build and pay for close to one million dollars worth of facilities and equipment and in addition have provided about $50,000 for training and research, all by the utilization of prepayment-group practice and adequate facilities.

You have heard and read many things about our organization. I can honestly say that the only thing wrong with what we are doing is that neither Mr. Kaiser nor I should be doing it. The doctors through their medical organizations should be doing the job. If they would, they could raise American medicine far beyond its present level, superlative as it is, and, what is more important, bring it to the people.

Those three principles prepayment, group practice and adequate facilities are the solution to medical care. There isn't a question or problem in medicine they can't answer. In effect it means organization of medical care, which has been delayed too long. It would preserve individual enterprise in medicine. Medicine has developed to the point of specialization where the individual physician can no longer be a separate enterprise. The individual group, however, can be. The free choice of the future will be the free choice of a group. There is a tendency to be conservative and move slowly in such matters, but it would be wise in this problem to take bold steps. Group practice needs no experimentation. It has proved itself in the clinics and universities of this country.

The job could be done on the basis of the state medical society and could cover all areas of the state, country and city with one statewide service. The doctors of the state could voluntarily aline themselves into three groups: (1) those desiring to work in full time group practice on a budgeted yearly income, (2) those desiring to work part time with these groups at a salary and retain some private practice and (3) those desiring to remain in private practice. Those choosing full time group work would probably be the younger men and many of those returning from the armed services. Those choosing part time group work would be the middle of the road physicians who would not want to give up the private practice they had built up and would on the other hand wish to have some contact with the group. Those choosing to remain in private practice solely would probably be the older men with large lucrative practices who chiefly serve the well-to-do classes. These men could serve as consultants and teachers for the full time group on a fee basis.

So all physicians could aline themselves in these classes. From those volunteering for full time group work a board of highly trained physicians could select ideal groups or as nearly ideal as possible and back them up with part time physicians. With careful planning the medical centers could be built in strategic areas, city and country, serving 50 to 60 thousand people each, these centers being staffed with the groups selected. Radiating from each medical center would be the diagnostic and treatment centers, bringing readily accessible care, preventive and curative, to the outlying areas.

Such a reorganization of medicine sponsored by the medical societies has unlimited possibilities. Neither government, industry nor anybody else could touch it. Under such an arrangement medical care could easily be paid for and therefore reach all the people. There would be an increase in net income to the physicians; they would live a decent life with time off for vacations and study and home life without worrying about losing

their practices. There would be a redistribution of medical care so that the country areas would be better supplied with facilities and specialties—a new hospital financial structure which would stand on its own feet and be controlled by the physicians. The younger physician coming out of training could be assured of an immediate good income and be utilized to the maximum of his capacity under supervision and there would be a great stimulus to research and training. And very important is the fact that medical care would remain in the hands of the physician, where it belongs.

One last word: Under such an arrangement the physician and hospital are better off if the patient never gets sick. With the modern discoveries in medicine and those yet to come, the medical care of the sick is a diminishing economy. Would it not be wiser to create now a new economy of medicine, remunerating the physician for keeping the patient well?

ENDICOTT-JOHNSON MEDICAL PLAN

EDWARD M. JONES, M.D.
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The Endicott-Johnson corporation is engaged in the business of tanning leather and manufacturing shoes. Their factories are located along the southern border of New York State about midway between Buffalo and New York City. The principal factories are located in Johnson City and Endicott, villages of about 25,000 people each. Smaller factories are located in Binghamton and Owego. These communities are all geographically closely related, starting on the east with Binghamton, whose western boundary merges with that of Johnson City, and continuing on to Endicott, which is located about 5 miles west of Johnson City. Owego is about 18 miles west of Endicott.

In 1918 Mr. George F. Johnson, the founder of the company, decided to give to his workers a complete medical service, not only for themselves, but also for the dependent members of their families. He was prompted to do this as a part of a broad program to improve the living conditions of the workers and their families and to help them keep out of debt. He was firmly convinced that debt was a great factor in the unhappiness of the average worker and that, many times, unexpected large medical bills were the cause of this. He felt that relieving the worker of the cost of his own medical care alone was not sufficient and therefore included all those for whom the worker might reasonably be expected to assume financial responsibility in case of sickness. Although, during the years that have followed, the boundaries of this liability have varied somewhat, nevertheless that has been the general principle which has governed the extension of service to the dependents of workers.

There has never been any attempt to make this service a research institution. We have not tried to develop it as a model for other corporations. It has been an attempt to give the workers complete medical care of high quality with reasonable freedom of choice of physician, hospitalization, medicines, laboratory and x-ray examinations without any limitation except for the necessity of the case.

The expense of this service, which has varied from around $700,000 to $1,000,000 a year, has been assumed entirely by the company as an operating cost, except for the period from April 1931 to September 1933, when the cost was met by a 5 per cent payroll deduction. When business conditions improved, however, the company not only reassumed the cost of the medical department but, in addition, returned to each worker the total amount that had been taken out of the pay checks during the period of the 5 per cent deduction.

The number of workers eligible for service has varied somewhat during the ensuing twenty-six years but has averaged around 17,000. The average number of dependents has been around 32,000, or a little less than 2 dependents for each worker. At first all workers were included in the service from the day of their employment, but because of the abuse of this system whereby individuals could work for the company for a few days and then apply for medical care for some condition which had been in existence for considerable time and which might require prolonged hospitalization and major surgery for its correction, this was changed so that medical service was not extended to a new worker until after a probationary period of six months. In September 1940, when the accelerated defense program began to get under way, the company began to hire a great number of temporary workers. At that time it was felt that these workers would be on the payroll only temporarily, and if there was a falling off in business they would be laid off. This was an entirely new policy for the company, as during the several years of the depression of the early thirties the company had not laid off its workers but had shortened up the working hours somewhat and divided up the work as nearly equally as possible. It was decided that these temporary workers, unless already entitled to medical care as a dependent of an old worker, would not be eligible for medical care, and when they were hired they signed a statement recognizing this fact.

After Pearl Harbor, the loss of so many of our physicians to the armed forces and the difficulty in obtaining any replacements made it necessary to continue the exclusion of these new workers from the medical service. There were not enough suitable replacements available to enlarge the medical department to provide these new workers with adequate medical care. Gradually, however, we have been able to obtain a few additional physicians, some part time and others full time. This, together with the loss of almost 4,000 workers to the armed forces and the migration of many others to industries more closely associated with the war effort, reduced the patient load to a point where the company again decided to return to the policy of furnishing complete medical care to all workers and their dependents if the worker had been in the employ of the company for at least six months on June 1, 1944.

At the present time, then, the following groups are entitled to medical care:

1. All workers who have been in the employ of the company for at least six months.
2. Husbands or wives of workers not otherwise gainfully employed.
3. Children. If the father is an Endicott-Johnson worker, all children regardless of age who are not married or not employed elsewhere are considered dependents. If the mother is a worker and the father works elsewhere, he is considered the head of the family and medical service would be extended to the mother but not to the children.

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4. Parents of workers. These have always been a problem as to just who is responsible for their care. If they make their home with a worker and are dependent on the worker for their living, they are usually considered eligible for medical care. Many times, however, there are several children in the family, some of whom work for the company and others work outside the company. Who is responsible in such a situation? Each of these cases is considered individually by the relief department, and if it considers that the responsibility is a divided one between those children working for Endicott-Johnson and those working elsewhere, frequently "limited service" will be extended; i. e., they may have the services of any of the physicians, the use of the facilities at the medical centers but not hospitalization or other service where a definite charge is made to the company. I think that you can see that the line of dependency is frequently a difficult one to draw and early in the history of the department there was some abuse of this extension of the service to dependents, so that occasionally parents not living in the Endicott-Johnson city area who were no longer able to work and who were in need of considerable medical care came to the Endicott-Johnson city area, were classified as dependents of a worker and extended medical services, even though they may have made their home with some other son or daughter before they began to be in need of medical attention. It did not seem as though these cases constituted a legitimate charge against the Endicott-Johnson corporation, and so unless the parents have made their home with the worker for some time and this seems to be their established residence, they are not as a rule extended medical care.

5. Individuals who are employed in the retail stores or the sales division. Such persons who do not live in the Endicott-Johnson city area are eligible for service if they come to the Endicott-Johnson city area, and many of these workers and their dependents do come to the medical centers or hospital for diagnostic study or elective surgical procedures.

During normal times we maintain three distinct medical centers, one in Binghamton, one in Johnson City and one in Endicott. The workers in Owego are cared for by a part time physician and referred to Endicott or Johnson City for any special treatment that may be necessary. In each of the medical centers there are available from four to seven physicians who are considered our general practitioners. Each of these physicians has scheduled office hours of two to three hours each day, and these hours are so arranged that there will be at least one physician in the office for office hours from 8 a. m. to 6 p. m. In addition these physicians make calls at the workers' homes and follow the patients to the hospital whenever their condition warrants hospitalization. Each center has an internist, at least one surgeon, an obstetrician, a pediatrician, an ophthalmologist and an otolaryngologist, who hold regular office hours and see patients as they are referred to them by the general practitioners. Antepartum and postpartum clinics and baby clinics are held by the obstetricians and pediatricians respectively. Practically all deliveries are cared for in the hospital. One syphilologist divides his time between the three centers and not only takes care of the venereal diseases but also performs cystoscopic and other genitourinary procedures. Laboratories approved by the state department of health perform all the usual blood and body fluid examinations.

In each of the medical centers is a dental department. Here a staff of six dentists and four dental hygienists carry out a program including cleanings, fillings and extractions. Dentures and inlays are not included in this service.

The normal procedure, then, in case of illness would be something like this: The worker calls the medical center and states that his youngster is ill and needs a physician to call at the home. The clerk asks the name of the worker and checks this against a key file which is kept in each of the medical centers. If the name given is listed as a worker and the child as a dependent, the clerk asks which physician is wanted and the call, together with the name of the physician asked for, is listed in the call book. This freedom of choice of physician is given to the worker except when one particular physician has already received enough calls to keep him busy for that particular day. In such case the worker may ask for some other doctor. Many times the patient has not given a preference and then the call is entered in the call book as an open call and one of the physicians who has other calls in that part of the town or one of the physicians who does not happen to be so busy on that day takes that call. From 6 p. m. to 7 a. m. only one physician is on call at each of the centers and takes all the calls received between these hours. This night call rotates each night, so that normally each of the general practitioners is on call one night in six or eight, depending on the center to which he is assigned.

In case the illness is such as to allow the patient to come to the office, he may call the center and ask what time his particular physician has office hours on that day. Each of the physicians has a definite schedule of office hours. They usually are scheduled for two hours at the same time each day except that an attempt is also made to allow each physician to be one hour late in the afternoon so that the workers may see the physician of their choice on at least one afternoon without losing time from their work.

The specialists for the most part spend their mornings seeing patients in the hospitals or in the homes in consultation. Their afternoons are spent in the office seeing patients referred by the general practitioners or other specialists.

On Sunday and holidays one physician is on duty at each of the centers and takes care of all the calls and office work for that particular day. An attempt is made to limit this work to emergencies as far as possible, and the workers cooperate in this fairly well. In the hospital, one man of each of the specialties is likewise on call and attends to all of the hospital work in his particular field.

In addition to the full time men, arrangements have been made with certain specialists for part time duty. In the fields of endocrinology, dermatology and thoracic surgery, specialists from Binghamton hold clinic hours once or twice a week, see patients in consultation as necessary and perform whatever surgery comes within their field.

Most of our specialists started with us in the capacity of general practitioners. Then, as openings in the various specialties have occurred, the general practitioner who is thought to be best qualified is given the opportunity to go away for postgraduate study and then return to limit his practice to that particular field. Rarely the need for men in certain specialties has

been so great that it did not seem advisable to wait for the training of a man, and in those cases men already trained have been employed.

In each of the medical centers there is a complete pharmacy in charge of licensed pharmacists who issue medicines only on prescription. We have no routine procedures; each physician is allowed to treat his patients as he deems proper.

In those cases requiring special care beyond that of our own staff, the patients are sent to medical centers in New York City, Boston, Baltimore, Philadelphia or wherever necessary to obtain the services which we feel are essential for that particular case. All the expenses of such care—physicians' fees, hospital care, railroad expenses and so on—are paid for by the corporation.

Most of the patients who are hospitalized are sent to the C. S. Wilson Memorial Hospital of Johnson City. This hospital was started by Dr. Wilson with the aid of the Endicott-Johnson corporation. On his death, the estate did not feel that it could continue the hospital, so the company purchased Dr. Wilson's interest and then deeded the hospital to a board of managers as a community hospital. Occasionally, in an emergency, patients are admitted to Ideal Hospital, the village owned hospital of the village of Endicott. In such cases the company pays the hospital the usual hospital rates.

When it becomes necessary to send a patient to the hospital, the physician decides what type of accommodation is necessary for the individual patient—ward, semiprivate or private room—and the medical service takes care of the entire hospital bill. If the patient desires more elaborate accommodations than the physician deems necessary, he may ask for such accommodations, and the difference in rate between the two is submitted to him as his hospital bill.

In cases requiring special nursing services, the heads of each department, medical and surgical, rule on the necessity for such services, and if they seem necessary the company pays for such special nursing service.

In addition to the medical department, there is a voluntary sick relief association to which the employee may contribute 25 cents weekly. In case of illness which compels him to remain away from work for more than one week, he is entitled to draw "sick relief" of $12 weekly for ten weeks. In cases in which the disability lasts more than ten weeks, the company frequently extends relief payments for a longer period of time, depending on the individual case need. No definite pension rate has been established, but each case is considered individually and the general principle has been for the company to supplement any social security payments which the individual may receive with sufficient funds to enable him to live without drawing on any funds which he may have been able to save.

The average cost of this medical service has been around $48 a year for each worker. In the past two years, however, because of increased costs, drugs, supplies, hospital rates and salaries, it rose to $57 in 1942 and to $63 in 1943. The average cost annually per person eligible for service was around $17 until 1942, when the rate rose to $19 and in 1943 to $21.

SUMMARY

An attempt has been made to give to the Endicott-Johnson workers and their dependents a complete medical service without any limitation except for the need of the patient.

The patient-physician relationship has been kept as nearly as possible the same as in private practice. He has a reasonable choice of physicians. He has access to specialists in every field. He is entitled to unlimited hospitalization. He may have unlimited amounts of laboratory, x-ray or other examinations. The entire service is free to the worker, the company assuming the whole expense as an operating cost.

MEDICAL SOCIETY PREPAYMENT PROGRAMS

LESSONS LEARNED FROM EXPERIENCE IN MASSACHUSETTS

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America and our profession are caught in the toils of a cyclically recurring world crisis. In the current phase of crisis we must attempt to discern and anticipate future patterns of medical practice. Only thus can we guide inevitable readjustments into channels which will preserve the basic values and achievements of our free profession.

These challenging days confront us with new demands, three of which seem to have crystallized clearly; first, to produce and distribute, in cooperation with other properly interested agencies, good medical care across the entire face and into all segments of our nation; second, to accept the intent of the American people to transfer medical care of the indigent from its present base of professional responsibility as a charity to a community responsibility through taxation; third, to devise mechanisms which will provide the wage earning and moderate income segment of the American populace with a mode of easy access to needed medical services on a less costly basis. Voluntary prepayment programs under medical society auspices seem to promise much in this latter problem.

1. APPROACH AND OBJECTIVES

Experience has demonstrated the unwisdom of initiating a medical society prepayment program on a complete coverage basis. Nearly all plans have reverted to a partial coverage surgical-obstetric contract with x-ray allowance. Massachusetts has found such a limited contract to afford an actuarially sound experience in types of service not readily abused by unwarranted overutilization, thus protecting the venture during its infancy from serious adverse selection. Massachusetts hopes soon to extend coverage to include hospitalized medical cases; ultimately we should extend coverage to include as much of home and office care as is feasible.

2. SERVICE VS. CASH INDEMNITY

Massachusetts in common with most states has built around the service type of contract as the nub of the effort. It is available to individuals with incomes below $2,000 a year and to families below $2,500. Cash indemnity contracts are available above these levels. This dual approach protects a subscriber's permanent eligibility despite fluctuations of income above or below these levels by automatically transferring him from the service to the cash indemnity category and vice versa. Only a service contract for the entire family in the

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lower income brackets under which no extra charge is made beyond the corporation allowance for the service will give needed protection to this group.

Prior to 1942 the American Medical Association had taken no official cognizance of the fact that responsible state societies were building prepayment programs on the cornerstone of a service contract. All statements referred to cash indemnity contracts. To obviate this anomaly, Massachusetts sought and procured acceptance by the House of Delegates of the American Medical Association in 1942 of a resolution which recognized the service contract on a par with cash indemnity contracts. Despite the accomplishment, an editorial appeared in THE JOURNAL on Nov. 20, 1943 which disregarded this action and misleadingly stated that "the medical profession has approved . . . prepayment plans on a cash indemnity basis for meeting the costs of medical care."

3. ORGANIZATION

There are professional and legal problems in organizing a prepayment program. On the basis of the experience of Massachusetts proper enlightenment of the profession concerning the program wins adequate professional support. Sufficient committee effort, local county presentations, publication of all plans and placement of printed information in the hands of every physician secured nearly 70 per cent participation by practicing Massachusetts physicians on the basis of signed contracts within a few months time.

The Massachusetts program was established on a statewide basis with no county review. Such review leads to professional dissensions; the public mistrusts a program which disrupts local professional unity; sales forces cannot cope with the handicap of sectional nonparticipation; public relations are disturbed when subscribers find that services rendered will not be paid for in "forbidden areas"; unlimited patient access to specialists' services may be interfered with by arbitrary limitations at county lines.

Another problem relates to participating and nonparticipating physicians. Dealing only with participating physicians constitutes the morale basis of the service contract. This practice must be initiated as basic policy and rigidly adhered to from the beginning. In dealing with 35,000 subscribers over a year and a half, Massachusetts thus far has rarely paid for services by a nonparticipating physician. This decision appears to have made our service contract secure to date.

Legal aspects of organization relate to the specific form of corporate structure erected. Some states seeking professional jurisdiction over purely medical problems have gone to the extreme of creating boards of directors with physicians constituting a majority, up to three fourths or more, of the board. This deprives the board of valuable nonprofessional points of view and maximal public confidence. Massachusetts, weighing the corporate powers of voting members versus boards of directors, created a directorate composed one third of physicians, one third of subscriber representatives and one third of eminent business leaders. The executive committee of the medical society was given the voting membership of the corporation, empowered under the by-laws to elect the board of directors and change the by-laws. This voting membership of doctors has a guaranteed position as an advisory committee on strictly medical matters, since action in the medical sphere contemplated by the directorate is reportable to the voting members thirty days prior to definitive action.

4. RELATIONS WITH BLUE CROSS

Massachusetts Medical Service established the closest contractural relations with the Blue Cross. The executive director of Blue Cross is also director of our corporation and provides administrative and sales services. This interrelationship seems reasonable on several counts: administrative costs should be significantly reduced; public acceptance of Blue Cross should be an effective entrée for a medical service corporation; business organizations prefer single sales approach and single payroll deduction for the joint services; sales to established Blue Cross groups should be most effectively accomplished by Blue Cross salesmen. The "should" in these statements relates to the unsettled problem of whether or not Blue Cross, even with the best of intentions, can give adequate sales time and effort to medical service contracts while seeking the highest sales volume of Blue Cross contracts.

Effective contractural coordination of medical service corporations with Blue Cross must be made in the face of divergent philosophies. Blue Cross executives favor an intimate interlocking of the directorates of the two corporations, even to the point of creating a single corporation to sell both hospital and medical service contracts. Physicians are well advised to create separate and distinct medical service corporations until the evolution of an experiment, so portentous in its bearing on our future professional destiny, is complete. Blue Cross executives do not sympathize with the profession's belief in the need of income limits for the service type of medical contract. Some Blue Cross plans are selling a cash indemnity surgical-obstetric contract of their own to supplement their hospitalization contract with local medical approval. A comprehensive hospitalization contract which includes payment for hospital-medical services, which appear as items on the hospital bill—pathology, anesthesia and x-ray—is contemplated by Blue Cross.

In resolving these controversial matters there should be thorough exploration of the wide area of common interests between us before we fall out over restricted areas of technical disagreement to our ultimate mutual confusion. Solutions may possibly be arrived at if discussion is based on the following premises:

1. Hospital billed medical services are delivered by practicing physicians who themselves have freely arranged their varying contractural relations with the institutions.

2. The Blue Cross and medical service corporations are strictly financial agencies entirely devoid of facilities, so that they do not distribute hospital or medical service directly per se. Therefore they should not be involved in the controversy relative to hospitals encroaching on the field of medical practice.

3. The two types of corporations seek by contracts with hospitals and physicians to take up the total cost of services rendered within restricted categories, with the understanding that no further charges will be made, thus giving the subscriber the so-called "service" coverage. Secondary financial contracts of this character by which Blue Cross seeks to take up any cost item on a hospital bill which is partly a hospital and partly a medical responsibility does not per se constitute encroachment on medical practice, provided such a secondary contract does not infringe on the terms of

the prior existing contract executed between the hospital and the physician. Since it relates to a pure financial transaction after the fact of delivery of a service, it cannot properly be construed as introducing a third party between the patient and his doctor or hospital.

4. Medical service corporations can never take up completely the entire cost of all the special medical-hospital services, because this would divert a disproportionate part of the subscriber's premium contribution intended for medical services to direct subsidy of elaborate hospital equipment, space and personnel.

5. There is a dual responsibility resident between the Blue Cross and medical service corporation to make these medical-hospital items available to the public on a service basis through a prepaid contract in the same way in which strictly hospital and strictly medical services are being made available.

6. These problems might be resolved if Blue Cross allowances for such items in hospital bills were made on three bases:

(*a*) Contracts should specify that allowances are for the cost of services (not for the provision or sale of the services per se).

(*b*) Descriptive circulars should explain that allowances paid the hospitals are to be allocated by the institutions according to existing contractural arrangements between the hospital and the physician who delivers the professional service.

(*c*) Safeguards should be erected against insurance stimulus to hospitalization of properly ambulatory patients who would normally be examined (say by x-ray) in the physician's office. Otherwise there will be costly and unwarranted hospitalization for ambulatory illness, with consequent aggravation of hospital crowding at the expense of private medical practice. This might well prove disastrous in the long run, because in well authenticated instances the establishment of a private laboratory by the physician has been his only means of escape from an inadequate unilaterally established contract, imposed on him by institutional shortsightedness. To jeopardize this professional "safety valve" might threaten the survival of a basic specialty in medical practice.

ACCOMPLISHMENTS

Medical society prepayment programs constitute a young movement not yet sufficiently seasoned for appraisal. There are statewide plans in sixteen states, with seven local plans in three other states. Total membership is about 1,000,000, with Michigan's 600,000 constituting over a half. Massachusetts has enrolled 34,000 persons since January 1943 based on about 15,000 contracts. Whereas Michigan's huge enrolment is 90 per cent in eighteen large industrial groups, ours is distributed through three hundred and ninety-six groups. Our largest group enrolment is 150. The average number of contracts per group is 37.6, and the average number of subscribers per group is 85. In 1944 our enrolment has averaged 68 per cent of the enrolled groups.

Massachusetts Medical Service has operated during this period entirely in the black. Selling our surgical-obstetric contract at the monthly rates of $0.85 for the individual, $1.65 for man and wife and $2 for the family, we have retired our organizational expense of approximately $5,000 and created a reserve and surplus of nearly $35,000. Our position seems sufficiently strong, so that recently the directors deleted all exclusions relative to preexisting conditions from the subscriber's contract. We hope in the near future to make some provision for hospitalized medical care.

From our experience the financial soundness of any state society program will be related in general to several items: first, the adequacy of the premium structure as related to the services offered and the compensation to the physician; second, the utilization rate by the subscriber, which will be determined by (*a*) the seasoning or elimination of preexisting surgical needs by prior Blue Cross or other insurance coverage and (*b*) the level of professional-public health-hospital services which determine the legacy of medical liabilities confronting the new corporation: third, the proper discharge of responsibility by the directors in adequately balancing the premium rates, administrative costs and contract benefits; and, fourth, adherence to a fixed schedule of allowances to physicians for standard services so that a solid actuarial experience may be evolved.

This short experience in Massachusetts suggests the promising value of a medical society prepayment program for the following reasons:

1. Because it is based on acceptance of a responsibility by the producers of medical service, who are guided by a code of high ideals and ethics and who usually exhibit an adequate sense of social and community responsibility.

2. Because it provides a pattern which can be made universally applicable in urban and rural areas, over short or wide distances, in large and small communities, in larger or smaller business units, in upper or lower income groups, the indigent and special governmental groups.

3. Because it creates a mechanism whereby medical care on a service basis can be provided for that income segment of the population in need of such protection without disrupting medical freedom, relations and establishments.

4. Because it encompasses such controversial medical modes as group practice versus individual practice and fee for service versus salary compensation, neutralizing this potent principle of prepayment with reference to each until these problems are resolved in the normal competitive evolution of medical practice.

5. Because it best safeguards the freedoms inherent in our American system of medical practice during this tragic interlude in which our republic must resolve its epic dilemma—whether to continue as a free enterprise, individualist society or to shift to a preponderantly socialistic, authoritarian type of state.

6. Because, if the former choice is happily made, medicine can adapt itself to current evolutionary change in democracy. A change by which community or governmental responsibility and enterprise on a federal-local basis shift from laissez-faire inactivity to that of umpire in cooperative efforts between the community and those free enterprise groups which exhibit the following three marks: (1) self-imposed discipline by the individuals who compose economic groups as far as group social responsibility is concerned, (2) acceptance in full measure by the group of its entire social responsibility as determined by community needs and welfare, and on a basis acceptable to the community, and (3) group cooperation with all rightfully interested agencies, whether governmental or private, in adequately meeting community needs. Selfish, indifferent or irresponsible groups will lose all right to free enterprise by default, and complete governmental action will supervene. To this current phase of our evolutionary democracy, medicine must pay heed!

St. Vincent Hospital.

VARIATIONS IN CURRENT INDUSTRIAL MEDICAL SERVICE PLANS

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None of us are afraid of ghosts. Our scientific training and intellect does not permit us to give credence to tales of preternatural caterwauling or mistlike apparitions. As children we all listened to or read ghost stories, with the usual glandular reactions, but have long since learned that all such evidences of abnormal psychology can be "laid by the heels" by the application of a little practical logic.

I am going to present a practical method by which we of the medical profession can banish the ghost which has haunted American medicine for so many years—can, in the traditional manner, drive a stake through the heart of government controlled medicine and silence forever its oft repeated threat to the traditional control of medical practice by the profession itself.

This specter of government control has not suddenly appeared on the horizon but has been gradually materializing, disguised as a panacea, for many years. In the past, opposition has been able to force it to retire into the background, but on each occasion of its resurgence it has been able to loom a little higher, until now not only has its head appeared but also most of its body. How much longer will it take for the legs to appear and for the apparition to materialize into a living Frankenstein, able to walk among us and become the potent, dominating factor in our work and our lives? I myself can already see the embryonic legs taking form.

We will not get rid of this specter by calling it base names, by proclaiming that it is unworthy and debasing or by hacking at it at random. It would seem that the more it is hacked the faster and stronger its limbs grow back again.

I think most of us must realize that the only way that we can stifle the growth of this being is to create an acceptable entity of its own kind having its own weapons—one which will not only take its place but will so far outshine it that the apparition will vanish in the brilliance of the plan of our creation. In terms of military strategy, our best defense is a vigorous offense!

I honestly and implicitly believe that the present trend toward socialized medicine can be completely "outshone" by a properly and strategically worked out plan of voluntary health insurance. Not health insurance that covers only part of sickness but an all out plan which completely and comprehensively covers all phases of illness and health—a plan which will have a budgetary basis that will insure an income commensurate with the doctor's education, qualifications, maintenance of social level and the vast expenditure of time and energy and yet not be so costly that it will be beyond the average subscriber's financial reach; health insurance that includes the medical fraternity as administrators. I believe a plan can be worked out along these lines which would nullify any inherent paradox which some may claim exists in the situation, would be attractive to the layman and would benefit our profession immeasurably by comparison with government control.

Read in a panel discussion on "Variations in Industrial Medical Service Plans" before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.

I need not point out that the poor receive excellent medical help from our profession at little or no cost and that the rich can afford to obtain any medical aid which they desire. The middle class individual, with his constant current economic demands, is neither so poor that he can obtain free aid nor wealthy enough to stand the rich man's prices. However, we have all noticed a trend toward an ever expanding group of so-called "indigent people" which includes many middle class people who, we know but cannot readily prove, can really afford to pay moderate medical fees. There is no doubt in my mind that many people admitted to charitable institutions and municipal hospitals could probably afford to pay all and could certainly pay part of their medical costs. We, as doctors, are aiding the expansion of this group of "tailor made mendicants" by continuing to donate of our services to those "indigents" who are undeserving.

My opinion is that that no one who has any income whatever should be allowed to obtain free medical aid. He should pay in proportion to his income, no matter how small the income may be. However, medical catastrophes do not come in 98 cent bits. Reasonable charges sometimes amount to hundreds of dollars. The $25 a week man never has a hundred dollars—at least for this purpose. He does, however, have 50 cents a week that he could contribute as his share—a share that in time cannot help but make up the hundred dollars.

Generally speaking, the "great" middle class deserve a break when they are faced with illness or injury. If they are allowed to work out prepayment medical plans, each will contribute his share and, for a change, the medical profession will be paid for all services rendered, except to the genuinely poor.

Many years ago in the Consolidated Edison Company we realized that we had a very large group of employees who did not have the wherewithal to finance expensive operations or protracted treatments but who could afford to contribute something regularly each week toward their medical care. Many times we advised employees to have tonsils removed because we felt that they were the focus of infection for generalized arthritis, to have abscessed teeth extracted for the same reason, to obtain x-rays or other laboratory data required for proper diagnosis—only to hear them say, truthfully, "That's fine, but where am I going to get the money?" At that time the average income of our workers was as high as and probably higher than the income of workers in most industries, but about the only thing we could do was to try to arrange with some semicharitable or city institution to have the work done with no, or at least very little, expense to the employee. You know that this condition exists in all communities. Who has been doing this free work? You doctors sitting here before me today!

We of the Consolidated Edison Company of New York, Inc., saw a solution of the problem when the rank and file workers—those earning less than $3,000 a year, asked permission to form a mutual aid association. The entire arrangement was voluntary. A worker had absolute free choice of joining the organization. As a member he paid five ninths of 1 per cent of his weekly salary, which averages about 22 cents a week. The company felt that it would gain enough from the experiment to match the weekly contribution of the employee. For this contribution the employee was eligible to obtain a total medical and a basic dental service. The doctors and dentists were provided on

a restricted basis, which is to say that a group of doctors was selected to work on such a part time basis as was felt to be adequate to take care of the illnesses of all the subscribers. By "part time" I mean that enough potential work is available to occupy the doctor for about a third to a half of his working hours. Members are allowed to select any one of the doctors on the group whom they choose. The same system applies to the dentists.

Of course it follows that within a short time one doctor has more work to do than another. This naturally occurs according to the interest and sincerity which the doctor puts into his work, and, because the doctors are paid on a fee basis, competition is keen. When necessary, members are free to choose specialists who cover all phases of consultant medical work and who also are in the group.

Our entire medical service is under the absolute authority of a medical director and his assistants, all physicians and surgeons in good standing. The medical staff includes physicians, surgeons, dentists, nurses, pharmacists and a masseuse, besides the clerical staff needed, all except the last being on a fee or retainer basis. In addition, physicians attached to various hospitals treat our employees and receive payment on a fee basis for their services.

The medical services available are:

1. Physical examinations before transfer, retirement or for special reasons.
2. Periodic examinations, including those for certain types of workers, such as men engaged in hazardous occupations.
3. Examinations requested by employees.
4. Examinations prior to return to duty, including routine fluoroscopy.
5. First aid for injuries or illness on the job.
6. Treatment for illness, either in one of the medical bureau offices, at a physician's private office, or at home.
7. The furnishing of prescribed drugs.
8. Diagnosis and treatments by specialists.
9. Extensive x-ray and laboratory facilities.
10. Cooperation with employees' personal physicians in cases in which the employee still chooses to have his personal physician, and advice on home medical problems.
11. Physical therapy service under the direction of a physician.
12. Dental diagnosis, treatments and restoration work.
13. Operations, medical treatments and other services in hospitals.
14. The facilities of a convalescent home under medical supervision.

During the time that our medical service has been in operation, our observations and personnel statistics have indicated a decided improvement in health conditions in a working force that now approximates 25,000 employees. Serious chronic illnesses, such as tuberculosis, cardiovascular disease and those due to toxic poisoning, have been reduced greatly. Our doctors rarely find the deplorable cases of neglect of teeth, mouth, throat, alimentary canal and the degenerative conditions due to tonsils or other foci of infection. Our absentee rate is well below the national average.

Our medical services are extensive, and the employees use them freely but, consisting as they do of essentials only, the services are not a tremendous burden financially either to the employees or to the company. All the services outlined can be obtained at a total cost for each employee of approximately $22 annually. Since employees contribute to the cost of the medical service, they feel that it is theirs to use, and both the management and the employees benefit by a sounder, healthier body of workers.

The question naturally arises What are the advantages of such a program?

Let me list them:

I. Every employee in the middle and lower income brackets is paying his way when he is ill. We do not have employees who are being treated in charitable or other free institutions. I really believe that a third to a half of present medical mendicants can be changed to paying clients by a prepayment medical plan.

II. The doctor's income is higher. He is receiving an actual income for the actual work he does. There are no debtors on his books. In addition, he is receiving pay for work that he formerly performed for nothing.

III. In all these plans there is money available for research and prevention. This money is available as part of current expense and can be used in ways that are deemed most feasible by the medical fraternity.

IV. As all aids of x-ray laboratory and other diagnostic facilities are available without monetary restraint, an immediate and reasonably certain diagnosis can be made. Not only is this a gratifying reward in the practice of medicine, but the patient is that much sooner available for efficient productivity in industry.

V. Patients will seek medical help earlier in the disease and in some cases more often. Early diagnosis, concentrated treatment, unlimited facilities and freedom of action allow the doctor to get more patients well much more rapidly.

VI. By exercising all methods of prevention, immediate and comprehensive diagnosis and concentrated treatment, we feel that our absence rate is about one half of that of the average industrial worker. This, of course, helps industry, but what helps industry helps the community and cannot but be an asset to the country as a whole. In addition, the employees are perfectly satisfied with this program and, I firmly believe, would vigorously oppose any other plan. The only dissatisfaction that exists is that we have not included the members of the family.

VII. Constant check-up of employees reveals many hidden conditions which, while not totally incapacitating, do retard their efficiency. Correcting these conditions in their infancy is prophylaxis against present loss of ability to produce and future lost time.

In conclusion let me leave this thought with you. If voluntary health insurance in the form I have described is worth while, and I sincerely believe it is, it should be adopted wholeheartedly by the profession. I do not believe that we shall get anywhere by watching small experiments proceeding in a few isolated areas. The present problem calls for prompt action: action to proceed with these plans in an extensive, organized manner; large plans that cover many people in many places. Let us beware that while we are too carefully and slowly scrutinizing what seems to be a real answer to our problem we might have saddled on us this "specter," this more radical substitute which has taken hold and which, as legislation, would have to be accepted "whole hog."

Let us, as the caretakers and guardians of the health of the American people, work out a "modern way" of

medical care for all our people with due consideration for their financial resources, with adequate provision for their proper care, with provision for an adequate income for the doctor and, last but not least, with a view toward preserving the dignity of our profession. This is our precept, our prerogative and our duty.

4 Irving Place.

QUESTION AND ANSWER PERIOD

ON PANEL DISCUSSION ON VARIATIONS IN INDUSTRIAL MEDICAL SERVICE PLANS

Question.—What is the attitude of the local profession to the association?

DR. JAMES M. ADAMS, New York: At the time the association was organized there was passive resistance on the part of the local medical profession which a few years later became active; however, I am pleased to say this has entirely vanished now and the association is recognized as a part of the medical life of that community.

DR. M. S. BLOOM, Binghamton, N. Y.: The plans have been set up with complete freedom of choice. They have never been set up in any community without first taking it up with the economics committee of the county medical society. The doctors have welcomed the plans. Recently, before care for dependents was added to the Ansco plan, I had meetings with the surgeons and the eye, ear, nose and throat specialists saying that, if they were willing to cooperate as they had with the employees, we would put it to a vote of the employees. The doctors agreed, the vote was taken, and care for dependents was added to the benefits of the Ansco plan.

Question.—How did the unions feel toward the prepayment medical plans?

DR. BLOOM: Very well. Some of the plans were in operation before the union was established, and the unions insisted in their contract that the plans be continued as before.

Question.—Will the long term instability of industrial units and of employment restrict the value of industrial units as a base on which to build medical care?

DR. JAMES C. MCCANN, Worcester, Mass.: My reaction is based on living in the oldest industrial section in the nation, New England. I live in Massachusetts, which was once the heart of the shoe industry and the cotton industry but is so no longer. I came from Maine, which was the heart of shipbuilding, but Maine has lost out to the Pacific coast. So there is a tremendous instability in industry, if we look at it from the point of view of constructing the medical care of the American people around that base. Mr. Henry Kaiser became interested in this problem, and he did establish a prepaid medical group on the West Coast. As president of Brewster he didn't. Since Brewster has just lost its contract for the construction of the Corsair airplane, since it is estimated that if the airplane industry will continue at 20 per cent of its present productive capacity in peacetime it will be fortunate, I wonder how stable that is as a long term base for revising the distribution of medical care. I know that key figures in major industries in New England are totally unwilling to become involved in this problem. Most do not want to become involved in any step encroaching on the tremendous problem of local medical care.

Question.—Would the long term instability of industrial units and of employment restrict the value of industrial units as a base on which to build medical care?

DR. JOHN J. WITTMER, New York: Industry isn't in the mood to take over this medical plan. Industry wants the community to do it and I myself feel that it is a community problem and that the community itself should organize to do it. The only reason industry has gone ahead on the present basis is that the community and other sources have not solved the problem and industry was forced to do it.

DR. SIDNEY R. GARFIELD, Oakland, Calif.: Mr. Kaiser and I both feel that medical care should be on a community basis. The plan we propose that the medical societies should operate, utilizing the principles we think are sound in operation, should supply not only industry but the community—the Lions Club, the Women's Club, the farmers' cooperatives—every organization possible that can arrange for collections of dues.

Question.—Why do you use a three thousand dollar limit for employees who join your plan?

Question.—Is a $2,000 to $3,000 income ceiling necessary?

Question.—You mentioned five ninths of 1 per cent by employer and employee as a contribution to support the service. Is there any top limit of earning beyond which the percentage does not apply?

DR. WITTMER: We decided on the $3,000 limit as a method of expediency backed by practical experience. The reason we said $3,000 in the beginning of our plan is that we have two methods of payroll payment: Those who receive less than $3,000 a year are on a weekly payroll, those who receive $3,000 or more are on a monthly payroll, and it was much easier to draw the line and say those on one side should be members of the plan and those on the other side would not. In addition is the fact that the average man who gets to $3,000 in the nonwartime period is usually an older man, 45, 50, 55, and usually he has reached the height of his family experience. He already has his two, three, four, five and six children. The man of the lower income bracket in quite a few instances doesn't have quite as many children. In interviewing these various individuals we found from the level of their living that they needed more money than the laborer would who is earning $2,000 a year. We found that our loan ratio was much higher in the $2,500 to $4,000 group, that those were the people who really were borrowing money. We think $3,000 is certainly the lowest level of payroll that should be used as a ceiling. The question on five ninths of 1 per cent—that sounds rather ambiguous—but if a man is earning $27 a week he pays about 15 cents a week; if he was earning $18 a week he would pay something like 10 cents a week. When he gets into the $40 to $45 group he still pays his five ninths of 1 per cent, which, of course, is actually more in that it is the same percentage of a higher amount of money.

DR. MCCANN: We established $2,500 in Massachusetts. We found out afterward from union men on our board that $3,000, roughly, draws the line of demarcation between the working group and management, and that if one has an income limit below that one would be asking the union by supporting it to introduce a factor of apparent discrimination in approaching the workmen.

Question.—Is there a tendency on the part of attending physicians to charge in addition to the amount allowed by the plan?

DR. BLOOM: Only occasionally do physicians outside the direct localities charge fees higher than those allowed. We are paying bills to physicians throughout the United States. We pay the allowance, and the patient pays the difference. The executives in the various companies are included in the plans. We don't expect the doctors to charge consistently the fees outlined for the workers.

DR. ADAMS: We have a number of plans in our company that were based on the plan outlined by Dr. Bloom. Most of those have a maximum for surgical operations of around $150, and the surgeon's fee is usually paid up to that amount; also set fees for house visits and office calls, and in most of the communities where these organizations operate we find that the charges of the physicians are seldom greater than those allowed by the association.

Question.—Is absence or sickness rate lowered as a result of the plan?

DR. ADAMS: I don't have the figures, but I can say in a general way that my close association with the Stanocola plan was in its early stages and at that time we did notice a definite drop in the sickness rate after the inauguration of the plan. Whether this was a direct result of the operation of the plan I am unable to say.

DR. BLOOM: Yes. Under the Ansco plan we had a gradual drop over a period of eight years. Less sick relief was drawn each year. We have no way of determining from the Mutual Benefit Association's data absenteeism for less than seven days. I should like to give the exact figures on sick benefits from

1934, when the average amount drawn annually per member was $3.75. This amount gradually decreased until 1940, when the amount drawn was $1.41 annually per member.

DR. WILLIAM A. SAWYER, Rochester, N. Y.: Per employee?

DR. BLOOM: Yes.

DR. WITTMER: I can say definitely that it is lowered in our plan to about half of the national average in spite of the fact that we have a liberal sickness payment plan. A man is entitled in any current year to one week's full time pay for each year that he has worked and after that period has expired receives twenty-six weeks in any current year from his mutual aid society at 80 per cent; in other words, if a man has been working for the company for twenty-six years he is allowed when ill twenty-six weeks' full pay, twenty-six weeks' mutual aid at 80 per cent.

DR. EDWARD M. JONES, Johnson City, N. Y.: Such figures are difficult to interpret because of the many factors involved. Although I have no statistics on our plan, I doubt whether it makes any difference in the absence rate from work. One important factor, particularly when women workers are involved, is the approximation of the sick relief rate to their weekly wage. During the years mentioned by Dr. Bloom this is a factor to consider.

DR. BLOOM: Our experience in the shoe industry shows that absence or sickness was reduced during the depression because people were afraid of losing their jobs. Our sick benefits were much lower then than during other times.

Question.—How are the doctors paid under the Consolidated Edison plan?

DR. WITTMER: The doctors are paid on a fee basis for each call they make. They make a report on each call, and a record is kept for monthly payments.

Question.—How can one give complete care to needy people without taxation carrying the load?

DR. GARFIELD: A certain proportion of the weekly fee can be set aside for the particular purpose; in other words, we have been able to do a certain amount of work for the needy. Right now, when there is full employment, one could have 5 cents a week set aside for medical care if they are later unemployed. The other way of handling it would be through the Social Security system, where the Social Security setup would pay the fee per week of the person who is unemployed.

Question.—What difficulty has been encountered in a fee basis plan of too much medical care, needless surgery, and the like?

Question.—What limitations as to length of disability should be imposed on disability based on psychosomatic disturbances?

DR. BLOOM: There is always a certain small percentage of employees who will do a lot of shopping around and who will go to doctors whether they belong to prepayment organizations or not. We have found that where there are certain limitations to what the employee is entitled to (and I think the plans I have suggested are rather comprehensive) we do not find that the employees exceed the limitations imposed very often. As Dr. Garfield said on the question of diminishing returns, with the new methods of treatment the number of days' hospitalization will be reduced. Where we have a limitation of hospitalization and of calls, the patients exercise judgment in order to maintain a reserve just as anybody with a certain amount of money in the savings bank exercises judgment and caution.

DR. GARFIELD: We have no particular problem on this point, since all our physicians are on a budgeted income. There is no possibility of overtreatment. They just treat a patient as much as necessary. We have quite a lot of psychosomatic disturbances, which we handle in the usual manner, with psychiatrists, and it isn't a major problem. We have found that hospitalization under our plan really increases; however, it is for minor conditions rather than major ones. It is for a shorter period of time and as a result ends up in being less costly to the organization.

Question.—In actual experience many acute illnesses rarely last two weeks unless complications ensue. It would seem that elimination of the seven to ten days is an element of weakness from the point of view of prevention. Why not have full coverage under the prepayment plan?

DR. WITTMER: I think this question has been misdirected, because we have full coverage. I believe in total coverage not only of the medical service but for the absence. A man who is sick can't get well quickly if he realizes that he is getting $12 a week rather than his usual $40 a week. I think paying him his regular salary from the day he is absent keeps his morale high. I don't believe there should be any limitation on medical service. I don't know what these people would do if you should say you would take care of them for twenty-one days or for $150 worth. At the end of that period, if they really were still ill, they would be up against it just as much as in the beginning. I think that most of the limitations on coverage are in the line of policing, and restriction on service is the poorest kind of policing I know of.

THE CHAIRMAN: I think this question has to do with the rather general policy of a waiting period. One of the speakers mentioned a waiting period of several months, I think, or that the patient had to be employed several months before he became a beneficiary of the plan. The questioner probably had that rather general principle in mind.

DR. BLOOM: It has been the policy for years to pay sick relief only after the first seven days' illness. It must be remembered that the employees themselves draw up these rules and regulations. They feel that it would not be fair otherwise. The purpose of the mutual benefit associations is primarily to provide medical care and to relieve the worker of worry. Medical care is provided whenever the employee desires it.

DR. ADAMS: Our company has preemployment examinations, and in the prewartime any person who applied for membership in the Stanocola Association immediately when he was employed by the company had a waiting period of sixty days. He had to pay dues for two months, in other words, before he could receive the benefits. Since there has been the shortage of doctors in the war period and so many transient workers coming and going, every one is made to wait a year now before he can apply for membership.

Question.—Should any distinction in fees be made to provide incentive for good medical care?

DR. GARFIELD: I don't think I am the proper one to discuss that. We don't work on a fee for service basis.

THE CHAIRMAN: In other words, you don't think it necessary?

DR. GARFIELD: I think the fee for service basis is definitely wrong in caring for medical needs of the people.

DR. BLOOM: If the fees are high enough and suitable to the leading physicians in the community, there should not be any trouble getting the outstanding men in the community to do the work.

Question.—Do employees object to percentage premium payment, that is, the higher brackets pay more than the smaller?

DR. BLOOM: I think I am the only one who has that system. Our members pay 15, 20 and 25 cents a week. Dues are determined by wage scale. This includes cash benefits also. Members cannot join a group higher than their wage level. If there are members who belong to other organizations that pay sick benefits, it has a tendency to encourage malingering. We seldom have difficulty on the question of sick benefits for male workers.

DR. WITTMER: We have the percentage, five ninths of 1 per cent, deduction plan. We have 99 and a fraction per cent of our employees eligible in the plant. This is an absolutely voluntary plan. In the last fifteen years I have never heard any reaction against the variation of deductions.

DR. DEAN A. CLARK, U. S. P. H. S., Washington, D. C.: There is no question in any of our minds that the executives and participants in these successful plans deserve not only our respect but our heartiest congratulations. Nevertheless there are some problems raised by our chairman's address yesterday and by some of the problems implicit in what was said today that are not answered or perhaps cannot be answered by such plans as these. For instance, all the speakers, I believe, spoke in general terms implying that this type of plan might solve the medical care problem for the United States. Then various groups were discussed separately, such as the indigent, the chronically sick, the aged, psychiatric cases. We heard from

our chairman yesterday of the problems of the rural areas, poor states and the regions that under almost no conceivable circumstances could finance their own medical care. And yet all the speakers favor a community type of plan. How could it be conceivable that on a community plan basis, and by "community" it might mean a city, a county, a state or the nation, such medical service plans could care for all our medical problems without taxation aid, necessarily federal tax aid?

DR. GARFIELD: The Kaiser plan would not solve the problem of medical care completely; however it would so nearly do so that the problems not taken care of, such as indigent medical care, could be handled easily through community support. In California if there was a statewide plan operated on the same basis as ours there would be sufficient funds developed within the plan itself to take care of indigents in this state. There may be some states where there is not a sufficient concentration of people to build up funds through such a plan to take care of the indigent and unemployed. In these exceptional instances government help through tax contributed funds may be thoroughly justified. I don't think government intervention is justified or desired if we can do the job ourselves.

DR. FRANCIS M. POTTENGER, Monrovia, Calif.: The industrial service plans described in this panel are attempting to solve medical problems which affect the efficiency of industrial workers in individual organizations. However, the medical profession today is confronted not by a limited but by a general situation which calls for a complete medical service providing both prevention and treatment for all the people. The experience of limited groups is valuable, but the Massachusetts plan is an attack on the problem which is interesting the medical profession as a whole. Any satisfactory plan must be applicable to conditions of both full and limited employment and also to those of unemployment. It must be suited to the income which the people may receive under all working conditions. It must furnish services not only to workers in large industrial organizations but to all others with small incomes. An important though insufficiently recognized factor in precipitating the medical problem in the last decade is the rapid industrialization which has taken place during the twentieth century requiring the moving of the workers from the country to the city. In 1900 30 per cent of the people lived in the cities. By 1930 this had been increased to 50 per cent. In the country the worker could raise much of his own food, but the city dweller loses his independence by the transfer and is obliged to spend far more for his maintenance than the rural worker, and when he loses employment he is unable to maintain himself and his family. In times of full employment unpredictable illness is hard for the workers to meet, and in times of unemployment it is all but impossible. The medical profession has long assumed what is rightly the government's obligation: the care for those of low income and no income. It is an injustice that it should carry this burden, for the preparation for the practice of medicine today requires a large outlay for which the physician deserves adequate return. Furthermore, today's practice, with its laboratories and technicians, is carried out at a cost which the physician cannot absorb in a fee that the average family can pay. In solving this problem the medical profession fears governmental control of medical practice. At the same time there is no way in which it can furnish adequate care to low income families except as charity or through taxation. The objection to governmental control might be overcome by the adoption of a three point program: (1) private practice; (2) voluntary insurance; (3) care for the remaining portion of the population through general taxation. In this plan the medical association could enter into contract with the state to supply the needed care and so would control medical practice and become a more efficient force in the prevention of disease. The government would meet the bills, being held responsible, as it should be, for the solution of society's problem. The two together could provide adequate working arrangements and would be responsible for their efficacy.

DR. KINGSLEY ROBERTS, New York: I believe that we have heard many things that emphasize the importance of bringing community administration into closer contact with the employer sponsored plans because, by the mutuality of interests, the problems raised about the care of the lower income groups become community problems, and since the management is also on the administration it becomes something that the community and management can learn to try to work out. I think we can realize from what has been said the great need for more data, more statistics, to show just what an active health conservation and preventive medical program, in conjunction with these industrial plans, can mean in terms of dollars and cents. When I go to some one like Dr. Garfield and say that I believe one should spend more time in lessening the incidence and severity of disease I would like to be able to pull out of my pocket a ledger which will show Dr. Garfield and Mr. Kaiser and Endicott-Johnson and anybody else that by spending money we are lessening the incidence and severity of disease and that by so doing they will ultimately save money for their plans.

DR. CHARLES V. CRASTER, Newark, N. J.: In Newark for a number of years we had a plan whereby the indigent poor and the near poor were taken care of by a group of physicians who were paid an annual salary. There was so much abuse and so much discontent and various other difficulties in connection with such work that we decided to change, and by arrangement with the state medical society we now have a plan whereby the indigent poor and the medically indigent, as they are called, the lower salary groups, will be taken care of by the city on a payment plan which is much the same as that received by the doctors in their private practice. The indigent poor and the medically poor are allowed to make their own free choice of physicians, and the city will pay the fee of these physicians. Of course, the indigent poor are given the service entirely free, but the medically poor are investigated by the welfare department and where they are found to be able to pay some part of the fees they are billed for that amount. The plan has been in operation only for the last six months, but so far we feel that it is giving us the answer to a condition which has been troublesome for a number of years.

DR. DAVID A. MCCOY, Boston: I was disappointed in the role of preventive medicine in these particular plans. Organized medical control measures are necessary in any industrial plant not only to serve as a stopgap against occupational disease but also to offer a formidable barrier against the nonoccupational diseases which cause so much absenteeism. I don't think any program either locally or nationally will be successful unless this particular branch of the program is developed.

DR. C. RUFUS ROREM, Chicago: I am director of the Blue Cross Hospital Service Plan Commission. The commission, which is part of the American Hospital Association, has been collecting data on the administration and particularly the administrative operation of the medical plans. It was done with some reluctance, because we felt it was not particularly the province of the Hospital Association to explore this field, but the plans were looking for groups which had facilities and some experience to do this. Dr. Wittmer did not say so, but I think we can take it for granted that, although people pay different sums into the operation of the mutual benefit association, the amounts paid on their behalf to doctors are identical. As far as the medical profession is concerned, the payments received on behalf of the low income subscribers are the same as for others. The practice of establishing an income level of $3,000 in Social Security legislation has been based on the theory that the balance will be made up from some sort of general taxes. There could be a uniform percentage applied to all income groups, even up to $10,000 (which is, for statistical purposes, the top limit of earnings in the United States), and down to zero. But such a procedure would need to be universal.

DR. MCCANN: We must not allow the unchallenged assumption that all the problems of medicine are related to reorganizing the profession on a group basis to pass as valid. That is begging the whole question. I was trained at the Mayo Clinic. I know its values. I practiced group medicine for several years after I left. I am now practicing on my own. I have equal devotion to the individual physician practicing by himself. There are fields for both modes of practice. The men who have been long in the practice of group medicine do not say that the whole profession should be reorganized on a group basis. Some say that the base of medical practice is the general practitioner. I think there will be major, important diagnostic centers for reference work through the nation, but I think the

backbone of American practice will continue to be the individual practitioner in the community and in the segment of the community where he is immediately available to the family. With regard to preventive medical service, if early diagnosis and early treatment will be stimulated by these methods we are contributing to preventive medicine.

DR. ADAMS: The discussion this morning has been limited to industrial and state plans, but there are several other types of plans which may have more universal application than any of these. First probably would come the plans organized and sponsored by physicians themselves, some of which are operating successfully throughout the country, and then other statewide medical association plans such as in the state of New Jersey. Third are the commercial insurance plans, of which there are many, one of which is operating satisfactorily in our company. Their rates are considerably higher than in our employee organizations, but they are an answer in some states where employee organizations are not permitted.

THE THERAPEUTIC EFFECT OF PARA-AMINOBENZOIC ACID IN LOUSE BORNE TYPHUS FEVER

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Many efforts have been made to find a substance of therapeutic value in typhus fever. The papers in the literature which cite the effects of various agents have been discussed in a recent editorial.[1] It is our purpose in this report to present the results of the treatment of classic epidemic louse borne typhus fever with para-aminobenzoic acid.

The possible therapeutic value of para-aminobenzoic acid was suggested by Snyder, Maier and Anderson,[2] who reported that the mortality of experimental murine typhus in white mice was reduced by the oral administration of the drug. In their experiments approximately 80 per cent of the untreated control mice died of murine typhus after intraperitoneal inoculation of infected yolk sac suspensions (Wilmington strain),[3] whereas more than four fifths of the mice which were fed on a ration containing para-aminobenzoic acid survived the same infecting dose of yolk sac. Even when the oral administration of para-aminobenzoic acid was started one or two days after the inoculation of rickettsias, there was a difference between the treated and the control groups.[4] Although large amounts of para-aminobenzoic acid were required to demonstrate this effect, the results were sufficiently encouraging to stimulate the clinical trial of the drug, which has been undertaken in the United States of America Typhus Commission ward at the Fever Hospital, Cairo, Egypt.[5] After the clinical study was in progress we received other reports which extended the observations of the effect of para-aminobenzoic acid in experimental typhus. Andrewes, King and van den Ende,[6] in testing a large number of compounds, observed a slight effect when maximal doses of para-aminobenzoic acid were given to mice infected by the intranasal route. Hamilton, Plotz and Smadel [7] noted a definite inhibitory effect of high concentrations of para-aminobenzoic acid on the growth of typhus rickettsias in the yolk sac membrane of developing chick embryos. The results of the experimental work cited are in agreement with the clinical observations which form the basis of this report.

CLINICAL STUDY OF TYPHUS FEVER IN EGYPT

Through the courtesy of the Egyptian officials, the United States of America Typhus Commission established an experimental ward in the Cairo Fever Hospital early in 1943, at the beginning of one of the most severe epidemics of typhus which Egypt has experienced. More than 2,000 cases were admitted to the Fever Hospital in May 1943 at the peak of the outbreak. Although the epidemic was less extensive in 1944, there was an excellent opportunity throughout both seasons to study the clinical aspects of the disease.

In order to provide a background for the evaluation of para-aminobenzoic acid therapy, the experience with louse borne typhus cases in 1943 and 1944 is reviewed briefly. All the cases discussed in this report were considered to be certain cases of typhus fever on the basis of clinical evidence. The diagnosis in nearly every instance was supported by definite laboratory results (rise in titer of Weil-Felix and complement fixation tests). In some cases the direct isolation of rickettsias was successful either from blood or from lice fed on the patients during the febrile period. All the strains which have been isolated from patients in the Commission ward have exhibited the characteristics of typical louse borne typhus both in 1943 [8] and in 1944.[9]

During the two seasons, 159 patients with typhus were admitted to the Commission ward. Of this number there were 44 patients who may be compared with the cases in the treated series, in that they were unvaccinated Egyptian males between the ages of 18 and 48, who entered the ward before the end of the seventh day of illness. They received no therapy other than nursing

From the United States of America Typhus Commission Unit at the Fever Hospital, Cairo, Egypt.
Lieutenant Colonel Snyder is a member of the staff of the International Health Division of the Rockefeller Foundation, on leave.
The supplies of para-aminobenzoic acid were made available by the International Health Division of the Rockefeller Foundation and Dr. Herald R. Cox (Lederle Laboratories).
The authors received generous cooperation from the officials of the Egyptian Ministry of Public Health, who facilitated the studies of the United States of America Typhus Commission in Egypt.
The director of the Cairo Fever Hospital, Dr. M. A. B. Demerdash Bey, made possible the establishment of the United States of America Typhus Commission ward and laboratory in his institution. His extensive experience with typhus, his continued interest in the work and his helpful advice and cooperation were of the greatest value.
In 1943 numerous chemical determinations for the cases in this study were performed by the 38th General Hospital laboratory staff.
In 1943 most of the serologic tests for the commission ward were performed by Col. Harry Plotz, M. C., A. U. S., and Capt. B. L. Bennett, Sn. C., A. U. S., with the technical assistance of Sergeant Guin.
Technical assistance was given by Sergeants Stephens and Dworkowitz and Corporals Stearman, Hogan, Cassell and Friedberg in the laboratory work of the commission ward.

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6. Andrewes, C. H.; King, H., and van den Ende, M.: A Chemotherapeutic Agent Active Against the Rickettsiae of Typhus, British report from the National Institute for Medical Research, Hampstead, London, 1943, quoted from Hamilton, Plotz and Smadel.[7]
7. Hamilton, H. L.; Plotz, H., and Smadel, J. E.: Effect of p-Aminobenzoic Acid on the Growth of Typhus Rickettsiae in the Yolk Sac of the Infected Chick Embryo, report to the Director of the United States of America Typhus Commission, Dec. 16, 1943, to be published.
8. Letter of Dr. N. H. Topping to the Director of the United States of America Typhus Commission dated Nov. 6, 1943. Plotz, H.; Wertman, K., and Bennett, B. L.: The Serological Pattern in Epidemic Typhus Fever: 1. The Development of Complement Fixing Antibodies. From the Division of Virus and Rickettsial Diseases, Army Medical School, Army Medical Center, Washington, D. C., December 1943, to be published.
9. Unpublished observations of the authors.

care, fluids and appropriate measures to combat specific complications which occurred during the course of hospitalization. This group of patients is designated as the "untreated" group.

ESTIMATION OF THE SEVERITY OF ILLNESS

After discharge from the hospital each patient was classified on the basis of his clinical course. The principal factors which influenced the estimation of severity were the intensity of subjective symptoms (headache, generalized bodily aches and pains, tinnitus, deafness), the degree of prostration, the extent of central nervous system involvement (mental dulness, stupor, coma, incontinence of urine and feces, abnormal neurologic signs), the severity of cardiovascular system involvement (hypotension, tachycardia, peripheral vascular failure, myocardial damage) and finally occurrence of urinary retention, oliguria, nitrogen retention, bronchopneumonia, otitis media, parotitis, furunculosis and gangrene. With these factors in mind the following classification was made:

B. Cases with minimal symptoms and signs, yet definitely diagnosed as typhus on clinical evidence.

C. Cases of moderate severity, showing slight prostration, central nervous system involvement, cardiovascular changes or mild complications.

TABLE 1.—*Forty-Four "Untreated" Cases of Typhus Classified According to Clinical Severity* *

Number and Percentage of Cases in Each Classification				
B	C	D	E	F
1 (2%)	12 (27%)	18 (41%)	5 (11%)	8 (18%)

* Unvaccinated Egyptian males, aged 18-48 inclusive, admitted to the ward in the first week of illness. The criteria of classification are described in the text. This footnote applies also to tables 2, 3, 4 and 6.

D. Severe typhus cases with pronounced prostration, central nervous system involvement, cardiovascular changes or serious complications.

E. Cases of such severe illness that a fatal outcome was expected at some point in the clinical course.

F. Fatal cases.

SEVERITY OF "UNTREATED" TYPHUS FEVER

The classification of the 44 "untreated" cases is shown in table 1. One case was B, 12 were C, 18 were D, 5 were E and 8 were F. This distribution of severity in the 44 "untreated" cases was parallel with that encountered in the entire experience of our ward as regards unvaccinated "untreated" patients in the same age group, irrespective of the day of illness at the time of admission to the ward. The rarity of mild cases is noteworthy.

TREATMENT WITH PARA-AMINOBENZOIC ACID

Twenty cases of typhus were treated with sufficiently large amounts of para-aminobenzoic acid to produce a measurable concentration of the substance in the blood. Before arrangements were made to determine blood levels of para-aminobenzoic acid, 3 patients were given small doses which are considered as entirely inadequate in the light of subsequent studies. Those cases are not included in this report. The treated cases are considered in three groups:

Group 1. Controlled series: 10 patients received para-aminobenzoic acid while the alternate patients were given routine ward care only.

Group 2. Consecutive series: 7 patients were treated with para-aminobenzoic acid; no alternate control cases were included.

Group 3. Miscellaneous cases: a group composed of 2 patients who had been ill with typhus longer than seven days at the time treatment was begun and 1 patient, aged 70, who received para-aminobenzoic acid in the third twenty-four hours of his illness.

Selection of Patients.—The patients selected for the controlled series and the consecutive series (groups 1 and 2) were unvaccinated males between 18 and 48 years of age, who had no obvious complicating conditions at the time of admission, whose date of onset of illness was clear and who were not later in their disease than the seventh twenty-four hours.[10]

Fifth and sixth day cases were accepted in the study group only if it was possible to make a clinical diagnosis of typhus at the time of inclusion in the series. Earlier cases were accepted without a positive clinical diagnosis at the time of admission if relatives or close personal contacts were known to have had typhus recently. Four cases were obtained from a group of family contacts who reported to the ward daily; their onset of illness actually occurred while they were under observation.

In the controlled series the decision as to which patients would receive para-aminobenzoic acid was made automatically. Alternate patients were treated in the order in which they entered the hospital. Two exceptions to this rule occurred. The series was interrupted by error when 2 patients were treated consecutively and by arbitrary decision when a man whose wife and father both died of typhus was treated with para-aminobenzoic acid although the series required a control (case 6921).

Plan of Treatment.—In all instances para-aminobenzoic acid was administered by mouth. The initial dose varied from 4 to 8 Gm. In the majority of cases the initial dose was followed by 2 Gm. every two hours unless the concentration in the blood attained excessive values. Adjustments in dosage were made in relation to fluid intake and urinary output. The fluid intake in nearly all instances was adequate to maintain the output of urine between 1,500 and 3,000 cc. in twenty-four hours.

The effort was made to keep the concentration of para-aminobenzoic acid in the blood between 10 and 20 mg. per hundred cubic centimeters. Para-aminobenzoic acid is absorbed and excreted very rapidly, so that a two hourly schedule of administration was decided on as that most likely to produce a relatively constant blood level. Determinations made at various times during treatment indicated that the two hourly schedule was effective in maintaining a satisfactory concentration of para-aminobenzoic acid throughout the period of therapy.

Para-aminobenzoic acid was continued for varying lengths of time in the first cases. Subsequently it was decided that treatment should be continued until the patient's rectal temperature was 37.5 C. (99.5 F.) or less for twenty-four hours. The average amount of

10. The study was restricted to cases in the first week of illness for two principal reasons. The response to para-aminobenzoic acid in the first few cases was not apparent for several days. There was no abrupt, dramatic change such as that produced by sulfonamide drugs in pneumococcic pneumonia, for example. It seemed unlikely that late cases could be treated with any prospect of evaluation of results unless a very much larger group of cases could be observed than the commission ward would accommodate. Furthermore, the great majority of cases in an epidemic can be diagnosed by the end of the seventh day. This time was arbitrarily chosen, therefore, as the basis of selection of cases.

para-aminobenzoic acid for each case (groups 1 and 2) was approximately 127 Gm. The patients who are the subject of discussion in this study received para-aminobenzoic acid for at least three days.

Nausea and vomiting attributable to para-aminobenzoic acid occurred in the first few cases. Thereafter, in order to lessen gastric irritation, sufficient sodium bicarbonate was given to neutralize the para-aminobenzoic acid. The acidity of the urine was determined at least once daily during para-aminobenzoic acid therapy. The amount of sodium bicarbonate was varied as required to keep the urine approximately neutral in reaction. After this plan was adopted, vomiting was encountered very infrequently.

Para-aminobenzoic acid was available in tablets of 0.5 Gm. each and in capsules of 0.3 Gm. each. Neither form was suitable for administration to typhus patients, who could not be persuaded to swallow the large number of tablets or capsules required for each dose; but they took powdered para-aminobenzoic acid readily if it was suspended in water or partially dissolved in a sufficient volume of 5 per cent sodium bicarbonate solution to render the mixture slightly alkaline. The usual amount was 2 Gm. of powdered para-aminobenzoic acid with 25 cc. of sodium bicarbonate solution. After swallowing the mixture, the patient was quickly given water to take away the slightly unpleasant taste of the drug. This method of administration was entirely satisfactory in most instances. Two patients, however, took their initial doses with difficulty, and no further attempt was made to treat them because of their uncooperative attitude. They have not been included in this report.

TABLE 2.—*Comparison of the Clinical Severity of Nine "Untreated" Control Cases and Ten Cases Treated with Para-Aminobenzoic Acid in Group 1*

	Number and Percentage of Patients in Each Classification				
	B	C	D	E	F
"Untreated" control cases.....	0	1 (11%)	3 (33%)	1 (11%)	4 (44%)
Cases treated with para-aminobenzoic acid.....	8 (80%)	1 (10%)	1 (10%)	0	0

Method of Determination of Para-Aminobenzoic Acid in the Blood.—The blood levels refer to free para-aminobenzoic acid as determined by Marshall's and Litchfield's procedure for sulfanilamide.[11] The standard solution of sulfanilamide was replaced by a standard of para-aminobenzoic acid. For some of the tests a Duboscq colorimeter was used; for the majority, however, a Coleman spectrophotometer was employed.

The Results of Treatment with Para-Aminobenzoic Acid.—In group 1, of the 10 patients who received para-aminobenzoic acid, 8 were classified as B cases, 1 was C and 1 was D. Of the 9 alternate control cases, 1 was C, 3 were D, 1 was E and 4 were F (table 2). The temperature charts of the patients in group 1 are shown in charts 1 and 2. All temperatures were taken rectally, with a single exception, patient 5768, chart 2, the values for the nineteenth day to the twenty-fourth day indicating oral temperatures. The solid line beneath the temperature curve shows the period of administration of para-aminobenzoic acid.

11. Marshall and Litchfield, quoted from technical manual Methods for Laboratory Technicians, War Department, Oct. 17, 1941, p. 134.

Group 2. The results of this consecutive series are similar to those in group 1. Of 7 cases 3 were B, 3 were C and 1 was D. Temperature curves are shown in chart 3. The temperature curve of a typical untreated case (12412) appears at the top of chart 2 for comparison with the para-aminobenzoic acid cases.

The 17 cases in groups 1 and 2 are contrasted with the 44 "untreated" cases in table 3, which shows the incidence of clinical severity in the two groups.

Group 3. Two patients in this group were treated for the purpose of extending the experience with para-aminobenzoic acid to patients admitted in the eighth and ninth day of illness. One patient, 6546, was started on para-aminobenzoic acid in his ninth day. He became progressively worse and died on the thirteenth day.

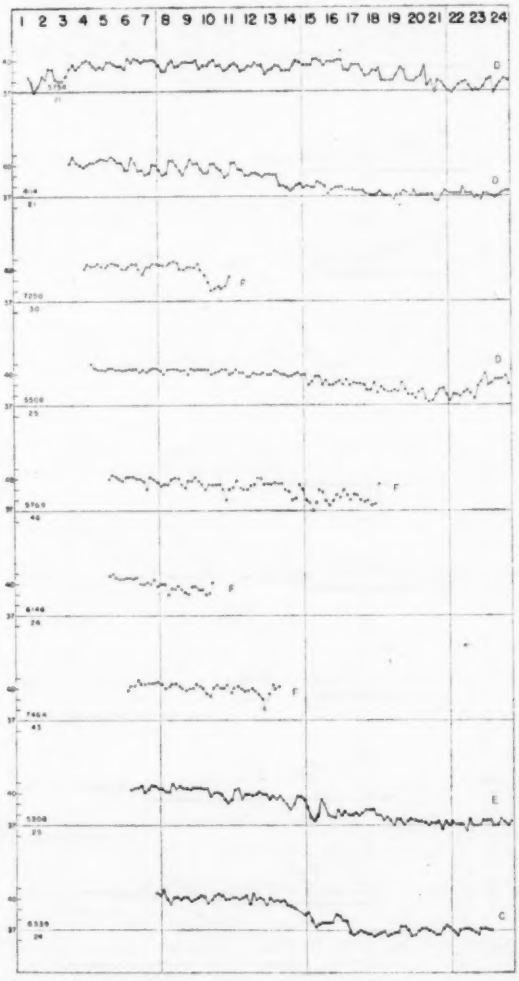

Chart 1.—Group 1 controls. Temperature charts of 9 "untreated" control typhus patients, arranged according to the day of illness at the time of admission to the hospital. The clinical classification of severity appears at the end of the fever curve. Values indicate rectal temperature in degrees centigrade. The numbers across the top of the chart refer to the day of illness. The hospital number and age of the patient appear at the beginning of each temperature curve.

Patient 7,100, admitted at the end of his eighth day of illness, was severely dehydrated. His urine contained many red cells on admission, but these disappeared in the next two days. The clinical course was complicated by a secondary rise in temperature associated with pain in the right flank, which may have been related to previous renal or ureteral disease.

Finally, patient 6,811, a man aged 70, was given para-aminobenzoic acid in the third twenty-four hours of

his illness to ascertain whether para-aminobenzoic acid would affect the outcome. The patient died on the eleventh day; aspiration of para-aminobenzoic acid and sodium bicarbonate may have contributed to the death of this patient. His case is discussed later. Temperature curves are shown in chart 4.

The pathology of the 2 fatal cases in this group will be described in a later United States of America Typhus Commission report by Lieut. Comdr. W. B. McAllister Jr. (MC), U.S.N.R.

The experience with para-aminobenzoic acid is summarized in tables 4 and 5, which show the clinical

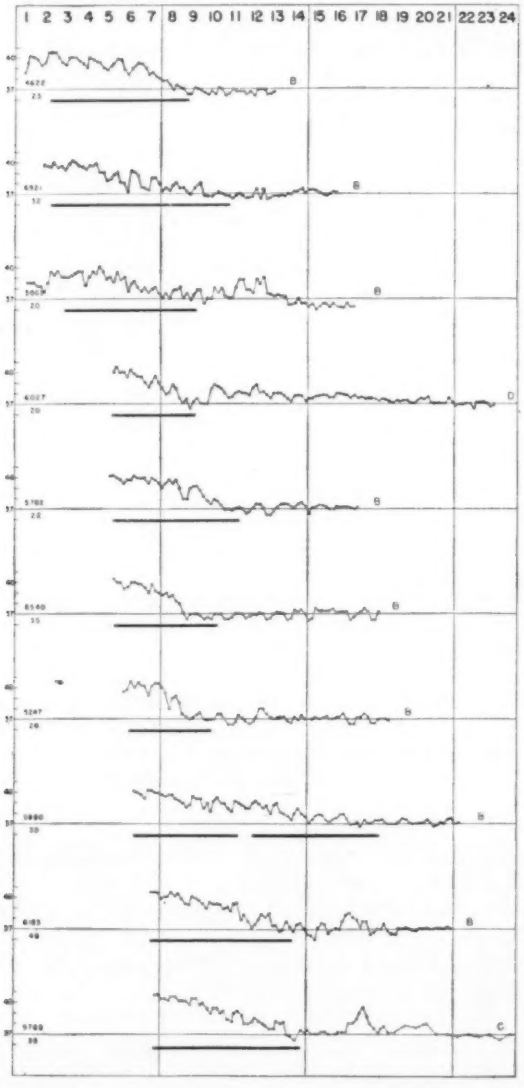

Chart 2.—Group 1 para-aminobenzoic acid cases. Temperature charts of 10 typhus patients who received para-aminobenzoic acid, arranged according to day of illness at the time para-aminobenzoic acid was started. The period of administration of para-aminobenzoic acid is indicated by the heavy line beneath the temperature curve. The clinical classification of severity appears at the end of the fever curve. Values indicate rectal temperature in degrees centigrade. The numbers across the top of the chart refer to the day of illness. The hospital number and age of the patient appear at the beginning of each temperature curve.

severity, duration of fever, total amount of para-aminobenzoic acid, complications and laboratory data.

Effect of Para-Aminobenzoic Acid on the Rash of Typhus.—Fifteen patients who received para-aminobenzoic acid had a definite rash, which was not as extensive, however, as that seen in the majority of "untreated" patients. The rash was considered to be questionable in 3 treated patients (4622, 14868 and 15080). No rash was seen at any time in 2 of the treated patients whose skins were very dark (5247 and 15000).

It was interesting to note that 2 patients who were treated in the second and third day of illness nevertheless developed a rash which was distinctive of louse borne typhus in every particular except that the lesions were relatively few in number and tended to disappear quickly.

Effect of Para-Aminobenzoic Acid on the White Blood Cells.—One patient, not tabulated in the series, developed a low white blood cell count (2,900) after twenty-four hours of treatment, and para-aminobenzoic acid therapy was discontinued. One other patient, 6540, likewise developed a low white blood cell count (2,950) but in his case the low count did not occur

TABLE 3.—*Comparison of the Clinical Severity of Forty-Four "Untreated" Cases and Seventeen Cases Treated with Para-Aminobenzoic Acid in Groups 1 and 2 Combined*

	Number and Percentage of Patients in Each Classification				
	B	C	D	E	F
44 "untreated" cases.....	1 (2%)	12 (27%)	18 (41%)	5 (11%)	8 (18%)
17 cases treated with para-aminobenzoic acid.....	11 (65%)	4 (23%)	2 (12%)	0	0

TABLE 4.—*Comparison of the Average Duration of Fever* and Clinical Severity of Forty-Four "Untreated" Cases and Seventeen Cases Treated with Para-Aminobenzoic Acid (Groups 1 and 2)*

	Average Duration of Fever, Days		
		Seventeen Cases Treated with Para-Aminobenzoic Acid	
Classification of Severity	Forty-Four "Untreated" Cases	Primary Continuous Febrile Period Only	Primary and Secondary Febrile Periods Combined
B	18	11	11
C	15	11	15.5
D	19.5	10.5	14.5
E	23.5	..	..
F	(13)	..	..
Average for all cases except F	18.5	11	12.5

* A rectal temperature above 37.5 C. (99.5 F.) is considered as evidence of fever.

until he had been afebrile for two days. Para-aminobenzoic acid had been discontinued twenty-four hours before the low value was obtained. The count fell further to 1,850 and rose thereafter to 3,500 at the time of discharge. The return of the white blood cell count toward normal values was slow in both patients, but neither one showed any other evidence of untoward drug reaction, and both had a mild, uncomplicated course. The differential count did not reveal any significant alteration in the relative percentages of polymorphonuclear leukocytes and lymphocytes. In the other para-aminobenzoic acid cases a tendency for the white blood cell count to drop to values between 5,000 and 3,500 was observed.

Effect of Para-Aminobenzoic Acid on Red Blood Cells and Hemoglobin.—No changes in red cell count or hemoglobin estimation were encountered in the para-aminobenzoic acid cases that were not consistent with typhus.

Effect of Para-Aminobenzoic Acid on Kidney Function.—There was no evidence in any of the para-aminobenzoic acid cases that the drug had produced renal complications. Indeed the low incidence of nitrogen retention [12] (12 per cent) in the treated cases (groups 1 and 2) as contrasted to that in the "untreated" cases (44 per cent) suggests that para-aminobenzoic acid may prevent renal damage in typhus. This subject receives further consideration in the comment.

Secondary Rise in Temperature.—In 9 cases, after the temperature had declined either to normal or at least to a point definitely below the expected value for typhus cases, para-aminobenzoic acid was discontinued. A secondary rise in temperature was then observed, varying from minimal brief elevations above normal to moderately high fever of several days' duration. When this phenomenon was first encountered, several explanations were considered: (*a*) that it represented a recurrence of typhus, that is to say, a release phenomenon related to the premature withdrawal of the inhibitory effect of para-aminobenzoic acid on the typhus rickettsias; (*b*) that there might be complicating infections; (*c*) that the fever was attributable to para-aminobenzoic acid alone. After careful survey of all

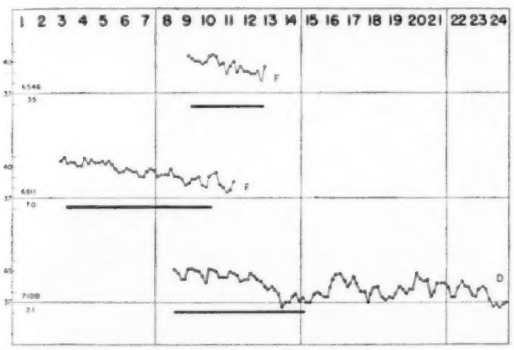

Chart 3.—Group 3 para-aminobenzoic acid cases. Temperature charts of 3 typhus patients who received para-aminobenzoic acid. Other details are explained in the description of chart 2.

the information available, it seems likely that the secondary rise was a manifestation of typhus, as postulated in *a*. Unfortunately this point was not investigated by inoculation of animals with blood taken during the secondary febrile period. One patient, 5768, had an exacerbation of chronic amebic dysentery, which offers a possible explanation of the secondary fever, although the latter did not closely coincide with the onset of diarrhea.

The high incidence of secondary febrile periods raises the question whether therapy was adequate in amount and duration. The patients who developed the secondary fever might have had such a widespread dissemination of rickettsias that they would have been D, E or F cases if untreated and might have required longer, more intensive treatment with para-aminobenzoic acid for elimination of the secondary rise in temperature.

A striking feature of the secondary febrile period was the paucity of symptoms and signs of typhus of a degree comparable to the height of the temperature. Mild headache and slight anorexia were the only constant complaints.

12. Blood nonprotein nitrogen values of 45 mg. per hundred cubic centimeters or higher are interpreted as evidence of nitrogen retention. Among the 44 "untreated" cases, blood nonprotein nitrogen determinations were made in 32 cases. Of these 14, or 44 per cent, were greater than 45 mg. per hundred cubic centimeters at some period in the course of the illness.

Importance of Early Treatment.—The best results were obtained when para-aminobenzoic acid was started on the second and third days of illness. Some effect was noted when treatment was begun as late as the seventh day. In this study the only ninth day patient who was treated, 6546, died on the thirteenth day despite large doses of para-aminobenzoic acid. It is clear that a very much more extensive experience with para-aminobenzoic acid would be required to define the limits within which beneficial results might be expected. The importance of early treatment is quite obvious, however.

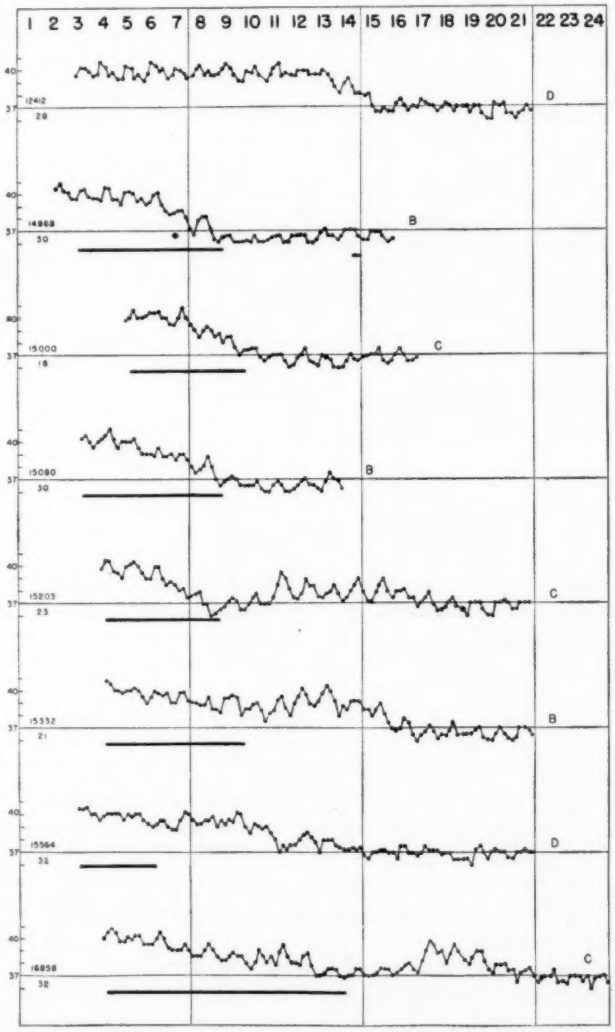

Chart 4.—Group 2 para-aminobenzoic acid cases. Temperature charts of 7 cases of typhus treated with para-aminobenzoic acid consecutively without alternate control cases. A typical fever chart of an untreated patient, 12412, appears at the top of the chart for comparison with the treated cases. Other details are explained in the description of chart 2.

Influence of Age on Results Obtained with Para-Aminobenzoic Acid.—Only 1 patient was given para-aminobenzoic acid who was outside the 18 to 48 age group. This patient was 70 years old, and treatment was started on the third day of illness. Although he received a large amount of para-aminobenzoic acid, the patient died. His case is discussed later.

Within the 18 to 48 age group, among the cases treated before the end of the seventh day of illness, the increase in age is not associated with increase in severity of illness. In the treated series the average age in the B cases is 29 years, C cases 27 years and

D cases 26 years. In the "untreated" series the average age in C and D cases is 25 years, in E cases 26 years and in F cases 33 years. Table 6 shows the relation of average age to clinical severity for both groups.

Contraindications to Para-Aminobenzoic Acid Therapy.—A white blood cell count below 3,000 has been regarded as a definite contraindication to further para-aminobenzoic acid therapy. Since there was a general tendency toward leukopenia, and since 2 patients had counts below 3,000, it is important to obtain daily white blood cell counts during the administration of para-aminobenzoic acid.

In the presence of severe dehydration and oliguria the usual plan of treatment (initial dose of 4 to 8 Gm. of para-aminobenzoic acid followed by 2 Gm. every two hours) is likely to produce excessively high blood levels. Until the output of urine has been brought at least to 1,500 cc. in twenty-four hours, the schedule of dosage should be modified according to the values obtained by frequent determinations of the blood level.

In 3 instances very high concentrations of para-aminobenzoic acid in the blood were encountered. The maximum value in the series was 49 mg. per hundred cubic centimeters. One patient became very drowsy and disoriented when his blood level was approximately 40 mg. per hundred cubic centimeters. Another patient became delirious when his blood level was 35 mg. per hundred cubic centimeters. Although these findings could be ascribed solely to typhus, nevertheless they were regarded as toxic manifestations of para-aminobenzoic acid because they promptly disappeared when the blood level fell to a low value.

If a patient is too weak or stuporous to swallow properly, the administration of para-aminobenzoic acid by mouth should not be attempted, since there is the possible danger of severe tracheitis from aspiration of the drug. One patient, 6811, aged 70, became so prostrated that he was unable to swallow rapidly. As a consequence of overzealous nursing he probably aspirated a fairly large amount of para-aminobenzoic acid and sodium bicarbonate. Oral therapy was discontinued as soon as this was discovered and penicillin was administered, but the patient died twenty-four hours later. At autopsy there was a minimal amount of pneumonitis; the principal finding was intense tracheitis and bronchitis, which was attributed largely to the aspiration of para-aminobenzoic acid and sodium bicarbonate. Although a stomach tube was not employed for the administration of para-aminobenzoic acid in the cases in this series, it is possible that the severe tracheitis of patient 6811 might have been avoided if a tube had been passed when difficulty in swallowing first developed.

TABLE 5.—*Summary of the Data from Twenty Cases Treated with Para-Aminobenzoic Acid* [1]

Case No.	Age, Years	Body Weight, Lbs.	Duration of Illness When Treatment Began, Days	Duration of Treatment, Days	Total Amount Para-Aminobenzoic Acid Given, Gm.	Duration of Continuous Fever, Days	Duration of Secondary Fever, Days	Lowest W. B. C., per Cu. Mm.	Maximum N.P.N.[3] Mg. %	Maximum Titer [2] Weil-Felix	Complement Fixation Epidemic	Complement Fixation Murine	Complications	Severity
4622	23	135	2	6½	168	8	0	7,500	30	640	1024*	16	None	B
6021	32	119	2	8½	182	9	0	5,800	31	640	512	Neg.	None	B
5862	20	132	3	6	154	12	0	4,900	24	1,280	128	..	None	B
14868	30	102	3	6	79	8	0	3,800	35	5,120	24	..	None	B
15564	32	123	3	3	62	13	0	4,700	63	640	1024*	256	Nitrogen retention;[4] ophthalmitis	D
15080	30	108	3	5½	92	8	0	4,550	..	640	....	..	None	B
15332	21	102	4	6	81	16	0	3,600	39	5,120*	1024	16	Otitis media; dental abscess	B
15203	23	114	4	4½	87	8	8	6,250	..	640	1024*	Neg.	None	C
14858	32	135	4	9½	216	13	6	3,300	36	2,560	1024*	Neg.	None	C
15000	18	100	5	4½	70	9	0	6,050	40	10,240	24	..	None	C
6027	20	123	5	4	94	8	8	5,650	29	5,120*	1024*	Neg.	Bronchopneumonia; ? transient heart failure; ? para-aminobenzoic acid intoxication	D
5782	22	125	5	6	146	10	0	5,650	32	5,120*	1024*	Neg.	None	B
6540	35	128	5	5	115	8	0	1,850	32	5,120	1024*	8	None	B
5247	28	125	6	4	100	9	1	5,100	43	2,560	1024*	256	None	B
5080	30	117	6	11	195	16	0	4,200	31	5,120*	1024*	Neg.	? Para-aminobenzoic acid intoxication	B
6183	48	125	7	6½	148	13	2	3,350	39	80	1024*	Neg.	Mild renal insufficiency	B
5768	35	110	7	7	161	13	4	3,450	46	160	1024*	256	Nitrogen retention;[4] exacerbation of chronic amebic dysentery	C
6546	35	122	9	3½	71	13	..	4,150	74	5,120*	Neg.	Neg.	Nitrogen retention [4]	F
6811	70	123	3	7	103	11	..	4,500	67	Neg.	128*	Neg.	Nitrogen retention;[4] bronchopneumonia; peripheral vascular failure; acute tracheitis	F
7100	21	91	8	6½	104	23	0	5,500	45	5,120*	1024*	Neg.	Nitrogen retention;[4] ? chronic renal or ureteral disease	D

1. Groups 1 and 2 are arranged together according to the day of disease when treatment was started. Group 3 cases appear separately at the end of the table.
2. The serologic results indicate the maximum titers obtained from a series of serum samples taken at frequent intervals throughout the period of hospitalization. However, a complete series was not available for test in cases 14868, 15000, 15080, 15203 and 15332; it is probable that somewhat higher titers would have been obtained if more samples had been tested in these cases.
3. When high blood levels of para-aminobenzoic acid were encountered, the total nonprotein value has been corrected for the nonprotein nitrogen contributed by the presence of para-aminobenzoic acid.
4. Blood nonprotein nitrogen values of 45 mg. per hundred cubic centimeters or higher are interpreted as evidence of nitrogen retention in this report.

* This symbol indicates that the end point was not reached, the value being the highest dilution tested.

TABLE 6.—*Comparison of the Average Age and Clinical Severity of Forty-Four "Untreated" Cases and Seventeen Cases Treated with Para-Aminobenzoic Acid (Groups 1 and 2)*

Classification of Severity	Average Age: 44 "Untreated" Cases	Average Age: 17 Cases Treated with Para-Aminobenzoic Acid
B	18	29
C	25	27
D	24	26
E	26	..
F	33	..

Early in the experience with para-aminobenzoic acid it was considered that the presence or the development of a bacterial infection might constitute a contraindication to para-aminobenzoic acid therapy. For example, treatment with para-aminobenzoic acid was terminated in patient 15564 when he developed suppurative ophthalmia as a complication of late stage trachoma. It is not possible, however, to conclude that bacterial infections actually constitute a contraindication to para-aminobenzoic acid on the basis of the experience gained from the observation of the 20 cases in this study. At the present time the view is held that para-aminobenzoic acid probably should be continued in cases of typhus despite the occurrence of secondary bacterial infections.

The Use of Penicillin for the Treatment of Typhus Complicated by Bacterial Infections.—If organisms susceptible to the action of penicillin are encountered in secondary bacterial infections which may complicate typhus, the use of penicillin to supplement but not to replace para-aminobenzoic acid therapy is recommended rather than sulfonamide drugs for several reasons: (*a*) Sulfonamide drugs in experimental typhus seem to have a deleterious effect;[2] (*b*) para-aminobenzoic acid inhibits the action of sulfonamide drugs on bacteria in vitro, a fact which prompts the prediction that sulfonamide drugs would be ineffective against secondary bacterial infections when administered in the presence of a high blood concentration of para-aminobenzoic acid; (*c*) penicillin has been found to exert a beneficial effect in experimental typhus by Pinkerton and his co-workers, both in mice and in the infected yolk sacs of developing chick embryos.[13] Clinical trial of penicillin primarily for the treatment of louse borne typhus in the Commission ward has been attempted in 4 cases. It is not possible to decide on the basis of such a limited experience whether penicillin, given early and in large amounts, does or does not affect the course of typhus itself. Nevertheless, by reducing or eliminating bacterial infections penicillin may offer considerable help to a seriously ill patient who would not otherwise survive the extra burden of a bacterial infection superimposed on that of typhus.

Optimum Dosage of Para-Aminobenzoic Acid.—At this time it is not possible to draw any conclusions as to the optimum dosage of para-aminobenzoic acid. It can be stated on the basis of this study that the patients who received the arbitrarily chosen dosage had relatively mild typhus. Whether the amount of para-aminobenzoic acid was excessive or minimal is not known.

COMMENT

The experience through two seasons in Egypt has clearly shown the very low incidence of mild cases of typhus in the "untreated" Egyptian patients in the 18 to 48 age group who were admitted to the Fever Hospital. Only 1 such case was encountered among 44 "untreated" patients in the Commission ward, whereas fatal cases were 18 per cent of the total. By contrast, it was very striking to find 11 mild or B cases in the same group when para-aminobenzoic acid was given before the end of the seventh day of illness among 17 patients, none of whom died. At the time the patients in group 1 were being studied, the mortality from typhus among the unvaccinated male patients aged 18 to 48 inclusive in the general wards of the Fever Hospital was 30 per cent. Furthermore, there were four deaths among 9 "untreated" cases of group 1 in the Commission ward. There can be no question that the typhus which prevailed during the period covered by this study was very severe. The high incidence of mild cases in the treated groups was therefore all the more impressive.

The length of time between the onset of illness and discharge from the hospital provides another demonstration of the difference in severity of illness between "untreated" cases and para-aminobenzoic acid cases (groups 1 and 2). For the "untreated" group the average was thirty-two days, for the para-aminobenzoic acid cases only twenty-one days. The figures do not include fatal cases.

Close daily observation of the patients convinced us, more than scrutiny of fever curves or tabulations of frequency of complications, that para-aminobenzoic acid lessened the severity of typhus. The treated patients developed few of the troublesome complications which make typhus cases so difficult for the nursing staff. The low incidence of prostration, stupor, coma, fall in blood pressure, urinary retention, oliguria, nitrogen retention and incontinence of urine and feces, which are so prominent in the untreated cases, was particularly impressive from the clinical point of view.

The drug appears to be quite safe for human administration. High blood levels (up to 49 mg. per hundred cubic centimeters) were accompanied by minimal constitutional effects. No detectable impairment of kidney function attributable to para-aminobenzoic acid was encountered in any of the cases. That typhus frequently produced severe impairment of renal function was a characteristic observation in the experience of the Commission ward. Therefore, any agent which might augment the tendency of typhus to produce oliguria and nitrogen retention is to be regarded with great suspicion. The absence of any undesirable effect of para-aminobenzoic acid on kidney function in this series is a very reassuring finding.

We wish to emphasize our conviction that a careful daily record of the fluid intake and urinary output is necessary in the care of the typhus patient. In our experience nitrogen retention, with or without oliguria, is the most serious development which may occur in typhus from the prognostic point of view. Without exception the fatal cases of typhus in which the blood chemistry was studied by the Commission, whether in the Commission ward or in the general wards of the Fever Hospital, showed a pronounced elevation of nonprotein nitrogen. Forty-four per cent of the "untreated" cases in the Commission study, despite the vigorous administration of fluids (4 to 5 liters daily), exhibited some elevation of nonprotein nitrogen in the blood. Daily examination of the urine, continuous observation of the fluid intake, the output and specific gravity of the urine, as well as determinations of the blood nonprotein nitrogen, plasma proteins, hematocrit and urea clearance, aid in the evaluation of renal insufficiency in typhus. This subject will be treated in greater detail in a later report of the United States of America Typhus Commission.

13. Greiff, D., and Pinkerton, H.: Inhibition of Growth of Typhus Rickettsiae in the Yolk Sack by Penicillin, Proc. Soc. Exper. Biol. & Med. **55**: 116-119, 1944. Moragues, V.; Pinkerton, H., and Greiff, D.: Therapeutic Effectiveness of Penicillin in Experimental Murine Typhus Infection in dba Mice, J. Exper. Med. **79**: 431-437, 1944.

Speculations on the Mode of Action of Para-Aminobenzoic Acid.—The rickettsias of typhus are known to multiply inside the endothelial cells of small blood vessels. It is in these cells that they have been demonstrated in tissues from human autopsies.[14] Multiplication of rickettsias outside living cells has not been proved. In one experiment the direct exposure of rickettsias to a concentration of 50 mg. of para-aminobenzoic acid per hundred cubic centimeters for one hour at 38 C. (100.4 F.) had no effect on their virulence for animals.[15] This suggests that para-aminobenzoic acid does not act directly on rickettsias. The clinical data are consistent with this observation. The treated cases did not show a rapid improvement following the administration of para-aminobenzoic acid. The usual finding was that the progress of the disease was arrested and that the patients did not become appreciably sicker than they were at the time treatment was instituted. In the course of four to six days the temperature fell and considerable improvement in condition was apparent, as though the natural defenses of the body had finally disposed of the rickettsias. The hypothesis which best fits this sequence of events is that para-aminobenzoic acid inhibits the multiplication of rickettsias inside the cells, thereby permitting the immunity mechanisms of the body to dispose of them, whereupon the vascular lesions begin to heal. If para-aminobenzoic acid is withdrawn before the immunity mechanisms have finally disposed of the rickettsias, these latent, previously inhibited organisms may then resume their growth and cause an increase in size of the lesions or even the formation of new lesions. The secondary febrile periods which occurred in half the para-aminobenzoic acid treated cases may be explained on the basis of this hypothesis. The usual finding, that the rash of treated cases was less extensive, likewise supports the "inhibition hypothesis." However, it should be noted that in 2 cases a definite rash appeared despite the fact that para-aminobenzoic acid was given very early in the course of the disease. This is regarded as evidence that para-aminobenzoic acid did not completely inhibit the progression of lesions which had already been established.

Para-aminobenzoic acid plays a most important role in the metabolism of many micro-organisms which ordinarily multiply outside the cells of the body. The inhibitory effect of para-aminobenzoic acid on the growth of rickettsias, which are obligate intracellular organisms, opens a wide field for speculation on the metabolism not only of rickettsias but of other intracellular micro-organisms as well. Perhaps para-aminobenzoic acid alters an intracellular enzyme system in such a way as to render the cytoplasm unsuitable for multiplication, possibly by blocking the formation of an essential metabolite which rickettsias are unable to synthesize for themselves.

It is also possible that the action of para-aminobenzoic acid is related to the mechanisms by which rickettsial toxic substances are combated. In this regard it may be pointed out that the patients who received para-aminobenzoic acid did not have the usual degree of prostration and "toxicity" which are part of the picture of typhus. Moreover, such a hypothesis may offer an explanation of the very low incidence, in the treated cases, of impairment of renal function, the importance of which is stressed elsewhere in this communication. For the purpose of our speculations we may postulate a hypothetical effect of rickettsial toxic substances on the kidney, resulting in impairment of renal function. If para-aminobenzoic acid plays a role in the detoxification mechanisms, this may explain the low incidence of nitrogen retention in the treated cases as contrasted to the high incidence in the "untreated" cases. However, there are other obvious considerations which are probably important in the development of the renal insufficiency in typhus; for example actual lesions in the kidney, severe hypotension and dehydration.

The material which is available for analysis does not permit the selection of a single hypothesis to explain our observations on the effect of para-aminobenzoic acid in typhus. Obviously a great deal of work is indicated on the problem of the mode of action of para-aminobenzoic acid.

The results of this study provide other subjects for speculation. Can compounds closely related to para-aminobenzoic acid be found which are even more effective? What is the scope of usefulness of para-aminobenzoic acid therapy in the face of an outbreak of typhus? What is the optimum dosage and plan of administration? What untoward reactions and complications may be expected? Will the course of other rickettsial diseases of man be favorably affected by para-aminobenzoic acid or closely related substances?

SUMMARY AND CONCLUSIONS

Twenty cases of louse borne typhus have been treated with para-aminobenzoic acid. Their clinical course has been compared with that of 44 "untreated" cases. The data from this study show that:

1. Large amounts of para-aminobenzoic acid were administered with ease to patients suffering from typhus.

2. There were no unfavorable effects when para-aminobenzoic acid was properly administered with the exception of a tendency to develop a low white blood cell count.

3. When treatment was started in the first week of illness, the clinical course of the patients who received para-aminobenzoic acid was much less severe than that of the "untreated" patients. The average duration of fever was considerably shorter in the treated group.

It is concluded that large doses of para-aminobenzoic acid exert a definite beneficial effect on the course of louse borne typhus if treatment is started in the first week of illness.

14. Wolbach, S. B.; Todd, J. L., and Palfrey, F. W.: The Etiology and Pathology of Typhus, Cambridge, Mass., Harvard University Press, 1922.
15. Snyder, J. C.: Unpublished observation.

Cosmic Doctrine of Aristotle.—The cosmic doctrine of Aristotle holds that the world is a living being having a soul. Since everything created is for some particular purpose, the body of man is evolved as the habitat of the soul. Matter is composed of five elements, earth, air, water, fire and ether. Every element must be looked on as living, since it is pervaded by the soul of the universe; there is an unbroken chain from the simple elements through plant and animal up to man, the different groups merging by insensible shades into one another; plants are inferior to animals inasmuch as they do not possess a single principle of life or soul but many subordinate ones, as is shown by the circumstance that when they are cut to pieces each piece is capable of independent growth or life.—Gordon, Benjamin Lee: The Romance of Medicine, Philadelphia, F. A. Davis Company, 1944.

THE BIOSYNTHESIS OF RIBOFLAVIN IN MAN

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It is clearly established that micro-organisms present in the rumen of ruminant animals will synthesize riboflavin in quantities sufficient to supply the requirements for this factor.[1] Biosynthesis of riboflavin has also been demonstrated in the cecum of the rat,[2] but in this omnivorous animal the phenomenon is conditioned by the diet, and only under particular conditions is it sufficient to furnish the requirements. Although it seems reasonably clear that riboflavin deficiency does occur in man, it is by no means clear that it always develops whenever the diet is deficient in riboflavin. The possibility that under given dietary conditions the intestinal bacteria of man might synthesize riboflavin, providing protection against deficiency, has never been evaluated. It is our purpose in the present report to describe experiments which demonstrate clearly the biosynthesis of riboflavin in the human intestinal tract—and in considerable quantities.

EXPERIMENTAL

Observations were made on 12 experimental subjects. These individuals were male adolescent youths between 10 and 16 years of age. After a control period on the institutional diet the subjects were placed on an experimental diet consisting of vitamin free casein, crisco, dextrimaltose, a mineral mixture [3] and a vitamin mixture [4] which contained no riboflavin. This diet provided 40 calories per kilogram, distributed approximately as follows: protein 15 per cent, fat 35 per cent and carbohydrate 50 per cent. The food, except for the vitamin mixture, was mixed together and given in equal portions at each meal. The vitamin mixture, given separately, was also supplied in equal quantities at each meal. Each of the food constituents was carefully assayed for riboflavin, but appreciable quantities of this factor were found to be present only in the vitamin free casein, which was found to contain 0.75-1.0 microgram per gram, providing an intake between 70 and 90 micrograms per day in the different subjects. The subjects pursued a sedentary life throughout the experiment. Complete fecal collections were made, which were analyzed for riboflavin in weekly periods. The urinary excretion of riboflavin was followed daily in the fasting hour specimen,[5] and complete twenty-four hour excretions were studied periodically. Analyses of riboflavin were made by the fluorometric method of Najjar,[6] which was modified slightly for the assay of feces.[7]

RESULTS

The subjects remained in excellent health throughout the period of study (three months) with the exception of 1 individual, who developed a Vincent's stomatitis during the second week. This intercurrent infection can hardly be related to the experimental diet, since it cleared without the administration of riboflavin.

The urinary excretion of riboflavin fell during the first two weeks of the study but remained constant thereafter, its level being of the order of magnitude of 6 to 10 micrograms in the fasting hour and 150 and 250 micrograms per day. The excretion of riboflavin in the feces showed no tendency to fall as a result of the riboflavin deficient diet, remaining at levels similar to those observed in the control period (200 to 600 micrograms per day). It was thus apparent that the combined excreta contained five to six times as much

TABLE 1.—*Average Excretion of Riboflavin in Feces of Subjects on a Riboflavin Deficient Diet*

(Results expressed in micrograms per day based on weekly collection periods)

		Week on Riboflavin Deficient Diet									
		Diet Alone						Succinylsulfathiazole Added			
Subject	Control Period	1	2	3	4	5	6	7	8	9	10
Ca	660		158	620	770	366	450	627	...	1,083	647
Fl	420		189	294	282	278	128	798	...	858	533
Fl	110		460	712	564	120	1,276	975	791	554	803
Hi	272	No	332	642	309	417	282	753	619	497	790
Jo	89	Col-	345	590	660	206	695	967	1,048	711	789
Kl	885	lec-	1,112	470	512	275	555	999	898	825	963
Mi	420	tion	635	302	137	230	366	867	997	619	679
Mo	430	for	...	495	362	475	445	876	672	878	1,033
Mu	267	9 days	...	336	170	84	361	962	833	841	1,023
My	1,400		380	465	605	662	565	920	886	1,050	621
Se	138		322	338	262	140	405	677	565	699	452
Wi	126		288	572	475	332	314	687	730	682	725

TABLE 2.—*Average Excretion of Riboflavin in Overnight Fasting Hour Specimen of Urine in Subjects on a Riboflavin Deficient Diet*

(Results expressed in micrograms per hour)

		Week on Riboflavin Deficient Diet									
		Diet Alone						Succinylsulfathiazole Added			
Subject	Control Period	1	2	3	4	5	6	7	8	9	10
Ca	22	11	10	9	11	14	10	8	6	7	8
Fl	25	7	6	6	8	11	9	8	6	6	5
Fl	27	7	6	6	8	8	6	8	5	5	8
Hi	27	9	9	10	12	11	12	10	5	6	9
Jo	30	11	12	12	10	11	12	10	7	7	13
Kl	19	12	8	10	10	12	14	15	11	9	12
Mi	38	8	12	9	8	9	8	10	6	7	8
Mo	20	16	13	15	12	13	13	12	11	16	10
Mu	35	38	29	34	40	38	32	10	5	5	6
My	24	10	8	9	9	9	10	10	5	5	7
Se	29	8	7	7	6	8	6	10	8	11	8
Wi	25	10	7	5	6	7	10	8	6	6	9

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1. Bechdel, S. I.; Honeywell, H. E.; Dutcher, R. A., and Knutsen, M. H.: J. Biol. Chem. **80:** 231, 1928. McElroy, L. W., and Goss, H.: ibid. **130:** 437, 1939. Hunt, C. H.; Kick, C. H.; Burroughs, E. W.; Bethke, R. M.; Schalk, A. F., and Gerlaugh, P.: J. Nutrition **21:** 85, 1941. Wegner, M. I.; Booth, A. N.; Elvehjem. C. A., and Hart, E. B.: Proc. Soc. Exper. Biol. & Med. **45:** 769, 1940.

2. Guerrant, N. B., and Dutcher, R. A.: J. Biol. Chem. **98:** 225, 1932; Proc. Soc. Exper. Biol. & Med. **31:** 796, 1934.

3. The Cox-Imboden mineral mixture was employed, Proc. Soc. Exper. Biol. & Med. **34:** 443, 1936.

4. The vitamin mixture, which supplied the following water soluble factors, was divided into three equal doses which yielded the following daily quantities: ascorbic acid 25 mg., nicotinamide 25 mg., calcium pantothenate 1 mg., pyridoxine 1 mg., choline chloride 5 mg., inositol 1 mg., para-aminobenzoic acid 1 mg., and thiamine 1 mg. In addition 5 drops of Mead Johnson cod liver oil concentrate were given daily. The water soluble vitamins were supplied through the courtesy of Merck & Co., Inc.

5. Holt, L. E., Jr., and Najjar, V. A.: The Clinical Diagnosis of Deficiencies of Thiamine, Riboflavin and Niacin, Journal Lancet **63:** 366 (Nov.) 1943.

6. Najjar, V. A.: J. Biol. Chem. **141:** 355, 1941.

7. Fresh stools mixed with glacial acetic acid (10 cc. for each hundred grams) were collected in glass jars. These were protected from light by black paper wrapping and kept in a refrigerator before analysis. Two grams of wet stool was mixed with 20 cc. of fifth molar acetate buffer (*p*H 4.5) and allowed to stand over a steam bath with frequent stirring for twenty minutes. The resulting mixture was then centrifuged and the sediment extracted with 10 cc. of buffer for ten minutes and likewise centrifuged. The two supernatant fluids were pooled and a 5 cc. aliquot taken for the determination of the riboflavin in the same manner described for urine.[6]

riboflavin as was ingested in the food, a phenomenon which could be explained only by the production of riboflavin by the intestinal bacteria. The remote possibility that the stool riboflavin might represent excretion of body stores rather than intestinal synthesis was excluded by experiments on normal subjects in whom intravenous injections of 5 to 20 mg. caused no increase in fecal riboflavin. The fact that riboflavin could be absorbed from the large intestine was demonstrated by means of enemas containing 20 mg. of riboflavin, which brought about a prompt rise in the excretion of riboflavin in the urine.

Because of our observation that the administration of succinylsulfathiazole would inhibit the bacterial synthesis of thiamine in the human intestinal tract,[8] the attempt was made to decrease the riboflavin synthesis by the administration of this drug. Succinylsulfathiazole was commenced during the seventh week of the study in doses of 1.5 Gm. every four hours. After the ninth week the dose was increased to 3 Gm. every four hours, which was continued until the termination of the study.

Although the administration of succinylsulfathiazole caused a virtually complete disappearance of thiamine from the stools in the course of a few days, very much to our surprise it produced relatively little effect on the output of riboflavin.[9] None of the twelve subjects showed a reduced riboflavin output in the stools; in fact the daily excretion was, if anything, somewhat higher after the administration of the drug (table 1). Of the 12 subjects, 9 showed no reduction in the urine output, 2 showed a very temporary reduction and only 1, a subject who had previously been excreting quantities of riboflavin considerably greater than the rest, showed a reduction to levels comparable with the other subjects (table 2).

COMMENT

The great excess of riboflavin in the excreta of our subjects as compared with the intake, the fact that it continued without appreciable decrease for twelve weeks and that the subjects remained in excellent health all this time without any loss of weight, all support the view that under these conditions the intestinal bacteria can synthesize enough of this factor to supply the requirements of the individual for this period of time. Disregarding the quantity utilized or otherwise destroyed in the body, it appears that the riboflavin produced in the body was five or six times the intake and in some instances more than ten times the intake. The fact that succinylsulfathiazole failed to inhibit the synthesis of riboflavin to any significant degree suggests that this factor is produced by organisms which are not susceptible to the drug, although it may also be produced by those which are susceptible. Smears of the feces after the administration of the sulfonamide drug still showed an abundance of bacteria to be present, although detailed bacteriologic studies of the stools were not made.

Further studies are needed to find out whether a minute amount of riboflavin such as was present in our experimental diet is needed for the bacterial synthesis of this factor or whether such synthesis would occur in any case. The conditions under which biosynthesis of riboflavin occurs in man likewise remain to be defined. We have no reason to doubt that under certain conditions riboflavin deficiency does occur in man, but the observations we have presented certainly cast doubt on the high and the universal requirement for this factor that has hitherto been accepted.

8. Najjar, V. A., and Holt, L. E., Jr.: Biosynthesis of Thiamine in Man and Its Implications in Human Nutrition, J. A. M. A. **123**: 683 (Nov. 13) 1943.

9. The possibility that succinylsulfathiazole may interfere with the determination of riboflavin in the stools was ruled out. The drug is not fluorescent under the same optical conditions. Incubation of sterilized stools with added succinylsulfathiazole for two hours at 37 C. showed no change in the riboflavin content.

SUMMARY

1. Twelve experimental subjects, placed on an experimental diet of purified vitamin free foods, in which only supplements of pure vitamins were given, subsisted for a period of twelve weeks on a diet containing between 60 and 90 micrograms of riboflavin per day.

2. The excretion of riboflavin in the urine, after a preliminary drop, tended to remain constant at a value roughly twice that of riboflavin intake. The fecal excretion remained unaffected at a level of five to six times the intake, a phenomenon which can be attributed to synthesis of riboflavin by the intestinal bacteria.

3. An attempt to inhibit the biosynthesis of riboflavin by the intestinal bacteria by the administration of succinylsulfathiazole for a period of four weeks met with no success.

4. The conclusion is drawn that riboflavin may not be a dietary essential under all conditions. The conditions in which it may be effectively synthesized in the intestine remain to be defined.

Clinical Notes, Suggestions and New Instruments

FATAL AGRANULOCYTOSIS RESULTING FROM THIOURACIL

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Leukopenia and granulocytopenia have been reported as potential dangers in the use of thouracil when given to thyrotoxic human beings. Similar observations have been made on adult rats which were fed thiourea.[1] Only 1 of the 72 patients in the group reported by Williams and Clute [2] developed agranulocytosis following the use of thiouracil, but this was not fatal. Astwood [3] also discussed 1 nonfatal case in a man whose toxic diffuse goiter similarly was treated with thiouracil. The following, as far as can be determined, is the first death that can be attributed to thiouracil as an agranulocytogenic agent:

REPORT OF CASE

History.—M. M., a white woman aged 62, entered the Cedars of Lebanon Clinic Hospital on March 3, 1944 because of nausea, vomiting and drowsiness of six hours' duration. She had been known to have diabetes for six years and had been negligent both in taking insulin and in adhering to a prescribed diet. Diffuse goiter of relatively mild toxicity had been present for about ten years. In 1940 a course of therapy with Lugol's solution had resolved the thyrotoxic symptoms almost entirely. On this admission to the hospital the patient was in impending diabetic coma with a blood sugar of 450 mg. per hundred cubic centimeters. Her urine showed a strongly positive reaction to tests for acetone and diacetic acid and a 4 plus qualitative Benedict's reaction. Her blood pressure was 200 mm. of

From the Thyroid Committee of the Cedars of Lebanon Hospital.
Dr. Kahn is chief of the medical service and Dr. Stock is resident in internal medicine.

1. Goldsmith, E. D.; Gordon, A. S.; Finkelstein, G., and Charipper, H. A.: A Suggested Therapy for the Prevention of Granulocytopenia Induced by Thiourea, J. A. M. A. **125**: 847 (July 22) 1944.

2. Williams, R. H., and Clute, H. M.: Thiouracil in the Treatment of Thyrotoxicosis, New England J. Med. **230**: 657-667 (June 1) 1944.

3. Astwood, E. B.: Treatment of Hyperthyroidism with Thiourea and Thiouracil, J. A. M. A. **122**: 77-81 (May 8) 1943.

mercury systolic and 0 diastolic. The response to therapy directed against acidosis was prompt. However, because of the unstable nature of her diabetes, wholly satisfactory control never was possible. During the next two months the patient had a few insulin reactions of minor degree.

As soon as possible after the diabetic acidosis had been corrected, evaluation of the patient's thyrotoxicosis was undertaken and the patient then was placed under the supervision of the thyroid committee of the hospital. The thyroid gland was diffusely enlarged to a slight degree. Exophthalmos was slight, and a fine tremor of the hands was present. A labile pulse varied between 100 and 120 per minute. The basal metabolic rate on the eleventh hospital day was plus 65 per cent on two determinations. Blood cholesterol was 164 mg. per hundred cubic centimeters. A blood iodine test by the Chaney method was 13 (normal, 5 to 7) micrograms per hundred cubic centimeters of plasma. The body weight at that time was 77 pounds (35 Kg.). Blood studies showed the hemoglobin to be 13.7 Gm. per hundred cubic centimeters with an erythrocyte count of 3,970,000 per cubic millimeter. There were 5,100 leukocytes per cubic millimeter with 66 per cent neutrophils, 3 per cent eosinophils, 27 per cent lymphocytes and 4 per cent monocytes.

During this period the patient was feeling well and was consuming 2,500 calories (carbohydrate 200, protein 110, fat 140) daily. Each morning 26 units of crystalline zinc insulin and 34 units of protamine zinc insulin were administered. Because of the age of the patient and the instability of her diabetes, thiouracil was regarded as a desirable agent for managing her thyrotoxicosis.

Beginning April 18, thiouracil was started with an initial dose of 0.8 Gm. per day (in four divided doses) for two days. Thereafter the amount was decreased to 0.6 Gm. per day (in three divided doses). A complete blood count, determination of the basal metabolic rate, routine urinalysis and recordings of body weight were ordered every five days.

Favorable response to the thiouracil was prompt. The basal metabolic rate had dropped in fourteen days to plus 42 per cent, the patient had gained 4 pounds (1.8 Kg.) and the pulse was 80 per minute. Slight enlargement of the thyroid gland was noticed. The response to thiouracil continued to be favorable, with a gradual rise in body weight and progressive lowering of the basal metabolic rate.

On the forty-fourth day of medication with thiouracil the basal metabolic rate was plus 10 per cent, the weight 90 pounds (41 Kg.) and the pulse stable at 80 per minute. At this time the dosage of thiouracil was reduced to 0.4 Gm. per day.

Seven days later the patient suddenly complained of a "swollen, dry throat," and within twelve hours her temperature rose to 101.4 F. Except for moderate congestion of the pharynx, physical findings were unchanged. Next morning the temperature was 98.0 F. The throat was still reddened, and tender submaxillary nodes were palpable. Within twenty-four hours the temperature rose to 105 F. (rectally). Pronounced congestion and edema of the soft palate was present.

The erythrocyte count at this time was 3,650,000, but the leukocyte count had fallen to 1,100 per cubic millimeter, with 2 per cent neutrophils, 1 per cent eosinophils and 97 per cent lymphocytes. Thiouracil was stopped immediately. A throat culture showed a few colonies of Streptococcus viridans and a moderate number of colonies of Staphylococcus aureus. A transfusion of 500 cc. of whole blood was given promptly. On the next day the leukocyte count was 300 per cubic millimeter, with 1 per cent neutrophils and 99 per cent lymphocytes. The pharyngeal mucosa became more reddened, and numerous blebs were present. Erythematous macules were seen to be scattered widely over the body. Within the next twenty-four hours 1,500 cc. of whole blood was given by transfusion. Other attempts at combating the agranulocytosis included injections of crude liver extract (15 units twice daily), pentose nucleotide (10 cc. injected intramuscularly every four hours) and oral administration of extract of yellow bone marrow. As an added effort against the rapidly progressive infection, penicillin was administered intramuscularly in doses of 20,000 units every two hours for four doses and then the same amount every three hours.

During the final two days of life the patient presented a profoundly stuporous picture somewhat similar to that caused by diabetes. The carbon dioxide combining power was 38 volumes per cent, and moderate glycosuria persisted. However, there was no acetonuria, and the blood sugar varied between 56 and 142 mg. per hundred cubic centimeters.

Despite all therapy the coma persisted, the temperature remained high, the buccal and pharyngeal lesions grew worse, jaundice appeared, and the agranulocytosis persisted. The patient died June 14, five days after the appearance of agranulocytic angina.

A total of 30.8 Gm. of thiouracil had been given over a period of fifty-four days preceding the clinical development of agranulocytosis.

Autopsy.—The autopsy was performed by Dr. Rubin Strauss, pathologist of the Cedars of Lebanon Hospital, ten hours and thirty-five minutes after death. The significant findings were as follows:

There was extensive generalized jaundice, and a number of scattered red areas 2 to 7 mm. in diameter resembling petechiae were seen on the torso and extremities. Microscopically these showed hemorrhage and some bacterial masses but no appreciable leukocytic reaction. The buccal mucosa was covered with sordes. The soft palate and pharynx were hyperemic, moderately edematous and in places covered with sordes. No ulcerations were seen. Microscopically no polymorphonuclears were noted, but there was moderate infiltration by small round cells. The bone marrow of several ribs and bodies of vertebrae was abundant and dark red. Microscopically, the cells of the granulopoietic series appeared to be greatly reduced in number.

Except for moderate fibrosis of the mitral leaflets and regional chordae tendineae, the cardiovascular system presented no appreciable abnormality. The lungs were heavier than average chiefly because of congestion and edema. There were scattered areas of hemorrhage but no pneumonia. The spleen was slightly heavier than usual and showed nothing but moderate congestion. Lymph follicles were small but active. The lymph nodes were moderately enlarged but exhibited nothing remarkable microscopically.

There was no evidence of obstruction in the extrinsic bile ducts. The liver was slightly smaller and softer than average; the parenchyma was dark brown and the lobules were indistinct. Microscopically there was considerable distention of the sinusoids; otherwise nothing remarkable was seen. An anatomic basis for the jaundice was not demonstrable. The pancreas was much smaller than average and appeared atrophic both grossly and microscopically. Diffuse fibrosis was readily seen microscopically, as was a striking distortion of the islands of Langerhans. Many of the cells were pyknotic and widely separated. The total number of cells in each islet seemed reduced.

The kidneys were of average size and presented no significant findings grossly or microscopically other than moderate congestion. The adrenal glands showed moderate atrophy of the cortical tissue and pronounced vascular engorgement. The thyroid gland was diffusely hyperplastic, was considerably infiltrated by lymphocytes and contained a few small areas of fibrosis. The pituitary gland and brain presented no abnormality to either gross or microscopic examination.

CONCLUSIONS

Both the clinical diagnoses diabetes mellitus and toxic diffuse goiter are supported by the anatomic alterations. Death in this case doubtless was due to the agranulocytosis with its subsequent agranulocytic angina. The terminal jaundice appears to be explainable only on a basis of toxic hepatosis. It seems quite possible that if polymorphonuclear leukocytes had been available there would have been anatomic evidence of a toxic hepatitis. In view of the ability of thiouracil to produce leukopenia and agranulocytosis, it is assumed that thiouracil was the basis for the agranulocytosis and toxic hepatosis in this case.

The severe diabetes mellitus is believed to have been a contributory factor in the death of this patient.

Council on Physical Medicine

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HOWARD A. CARTER, *Secretary.*

OCCUPATIONAL THERAPY IN A PRIVATE GENERAL HOSPITAL

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Occupational therapy is an objective treatment prescribed by a physician to hasten a patient's recovery from disease or injury or to contribute to his adjustment to hospitalization.[1] The activities used as treatment must be sufficiently interesting to the patient to motivate his active participation. The occupational therapist must be trained professionally to carry out the physician's prescription to select and adapt activities which meet the patient's physical and psychologic needs. The occupational therapist should be a graduate of a school approved by the Council on Medical Education and Hospitals and registered by the American Occupational Association.

Occupational therapy is divided roughly into the following groups:

1. *Preventive or Diversional Therapy.*—This type of occupational therapy comprises simple prescribed activities, including recreation, which serves to induce rest, to control general exercise, to prevent neuroses and to sustain morale.

2. *Functional Therapy.*—This type comprises prescribed activities planned to assist in the restoration of articular and muscular function, to improve the general condition, to build physical endurance and to aid in mental rehabilitation and in the treatment of mental disorders. Aitken[2] has shown the value of functional occupational and physical therapy in the rehabilitation of the industrial casualty.

3. *Prevocational Therapy.*—This type comprises work processes planned and prescribed to prepare a patient for his return to his former employment or for vocational education.

Most large general hospitals maintained by county, state or federal funds have an occupational therapy department. A statement concerning the coordination of the physical and occupational therapy departments by Watkins[3] emphasizes that the combined departments should be directed by a physician specializing in physical medicine. The technical personnel in his department consist of a supervisor of physical therapy with six assistants, and a supervisor of occupational therapy assisted by two full time and one half time occupational therapists.

It is believed that every general hospital regardless of size should have an occupational therapy department, because it is as necessary as a physical therapy department and any other therapy. The occupational therapy department should be in the department of physical medicine and under the supervision of a physician specializing in physical medicine. Most private general hospitals will soon require a department of physical medicine (physical and occupational therapy) in order to carry out the federal-state programs for crippled children, the federal-state programs of physical and vocational rehabilitation and to enable them to care properly for many casualties of civilian industry.

Some insurance companies have begun to establish physical and occupational therapy departments as curative workshops or rehabilitation centers, as units separated entirely from hospitals. The advantage of this plan is that the patient does not feel that he is returning to the hospital for treatment, but the one disadvantage of the plan is that the doctor who originally treated the patient does not see him often. Lieut. Col. Raymond Hussey, M. C., U. S. Army, formerly chairman of the Board of Occupational Diseases, Department of Labor, and chairman of the committee on Workmen's Compensation, Council on Industrial Health of the American Medical Association, states "It is unfortunate, I think, that physical and occupational therapy clinics are organized separately from hospitals, since we all realize that physical and vocational rehabilitation procedures should be given simultaneously with medical and surgical treatment."

Recently an insurance company writing workmen's compensation insurance established a rehabilitation center for cases requiring physical and occupational therapy. The president of the company stated that in some instances of extended convalescence his experience showed that there was a considerable amount of difficulty in the achievement of complete recovery and a working status. In order to determine a solution, the company established the Rehabilitation Center. After a year of operation this insurance company was convinced that efficient physical and occupational therapy, under medical guidance, supplies a satisfactory solution to this problem and that rehabilitation should be instituted as soon after injury as possible. This indicates that rehabilitation should be started in the hospital.

In the last three editions of the Handbook of Physical Therapy some activities of the occupational therapy department at St. Luke's Hospital in Chicago were described. St. Luke's is a general hospital containing 485 beds and supported by private endowments and contributions. In order to illustrate the financial arrangements of an occupational therapy department, St. Luke's Hospital can be cited as an example.

For twenty-five years no charge was made for occupational therapy, because it was classed as a necessary adjunct of hospital service. Two years ago the chief of the medical staff thought that, as occupational therapy was a method of treatment, a charge should be made. These charges are now $1 per treatment for occupational therapy alone. When occupational therapy is combined with physical therapy, a minimum charge for the first hour or major fraction thereof is 50 cents and each additional hour or major fraction thereof is 25 cents plus the charges for physical therapy treatments. It was as difficult to introduce this added fee for occupational therapy as it would have been to launch a new department. Nevertheless, almost $900 was received during the first year.

General hospitals should maintain capable occupational therapy departments that can practice preventive or diversional therapy. Without occupational therapy many patients are unable to make the necessary social and institutional adjustments so essential to their recovery. The majority of hospitals provide libraries and radios, and occupational therapy is as important.

1. Manual of Occupational Therapy, Chicago, American Medical Association, 1943.
2. Aitken, A. P.: The Rehabilitation Center, Rhode Island M. J. **26**: 286 (Dec.) 1943; Rehabilitation of the Industrial Casualty, Virginia M. Month. **71**: 177 (April) 1944.
3. Watkins, A.: Occupational Therapy and Rehabilitation **22**: 115 (June) 1943.

The physical therapy and occupational therapy departments at St. Luke's Hospital are under the direction of a physician specializing in physical medicine. In the occupational therapy department are two registered occupational therapists, and usually there is one occupational therapy student who is receiving instruction in the practical phase of this work.

When occupational therapy is being carried out the posture assumed by the patient is most important, whether the patient is in bed or sitting in a chair. Wherever possible, the occupational therapists should see that the following instructions are observed:

I. *Regulate Positions in Bed.*—Recumbent Position: This position serves to prevent deformity and to improve general circulation.

A. Flatten the mattress: It is preferable to eliminate the pillow from under the head. A flattened chest and a slowing up of the circulation will result if a pillow is used.

B. Place a small pillow or roll under the knee joint. Subluxation of the knee frequently results if this procedure is neglected.

C. Train the patient to lie with his elbows and wrists extended to prevent flexion deformities. The arthritic patient frequently assumes a position in which he flexes the elbows and wrists and rests them on his chest for comfort and body warmth. The pressure of the arm on the chest retards full inspiration and slows up circulation.

D. Prevent deformity of outward or inward rotation of the hips by propping the legs in a correct position with pillows or sandbags.

E. Maintain a 90 degree angle of the ankles and prevent foot drop by using a heavy box or bricks at the foot of the bed to hold the feet at right angles and prevent pressure of the bedclothes.

F. Arrange the equipment so that the patient lying flat on his back may maintain a good functional position.

II. *Sitting Position.*

A. If possible use a flat canvas or board back rest. If a pillow is used it should be firm and extend from the hips to the shoulders. The chin should be in, the head back and the chest high. A firm pillow or roll under the head of the tibia to flex the hip and knee will prevent the patient from slipping down in bed and assuming a poor position.

B. The patient who is allowed to sit up for his occupational therapy should be in a good functional position.

III. *Position in a Chair.*—Whether a wheel chair or a regular chair is employed, it should have a straight back. While the patient is sitting up he should be erect with his chin in and chest high. If a pillow is used it should be placed below the shoulders so that the head is not pushed forward and the chest not flattened. The occupational therapist should see that the patient is seated correctly while at work.[1]

MENTAL DISEASES

Although St. Luke's Hospital is a general hospital, it has one floor for mental diseases. Here the occupational therapy department has one room (locked when not in use) devoted to these cases. Occupational therapy treatment is given in accordance with the principles of McGraw and Conrad.[4]

In the handling of neuroses the department utilizes occupational therapy as an aid in overcoming the tendency to avoid responsibility, in increasing the feeling of potency, in directing the desire for approval that is characteristic of the hysterical into more useful channels and in the allaying of the restlessness of anxiety.

If the occupational therapist is tactful, manic patients with agitated depressions may be persuaded to work quietly and to confess later that they have begun to feel more normal when thus occupied. The warning that cannot be too often stressed is that suicidal attempts come, not at the period of greatest inertia, but just at the time when the patient is starting into or coming out of a depression, so that many patients who are just beginning to take an interest in occupational therapy may also be interested in using dangerous tools with great cunning and consequent menace to themselves. The same caution about tools is necessary when dealing with paranoid patients, but those institutions in which paranoids create a minimum of disturbance and are most contented are the institutions that have promptly provided a suitable occupation for each individual. If furnished with an outlet, the drive of these patients is much less violent; but the physician should be aware of an increase in tension among those who have long been permitted to use dangerous tools.

A helpful concept is to grasp the patient's interest at the emotional age level at which we find him living.

The problem in the acute phase of schizophrenia is not so much that of catching the attention of the patient as in maintaining his interest. We cannot be positive as to whether novelty or old habits should be relied on at this point. One patient with acute schizophrenia will be confused by unaccustomed procedures; another will block when old habits call up old conflicts. Not infrequently a woman having a paranoid precox will want to do carpentry or other work that she considers to be a man's occupation.

Generally a patient's expressed wishes to attempt any specific work is gratifying and well worth trying. Some occupational therapists may permit the patient to work out unconscious conflicts with symbolic objects, similar to the method which child psychologists use when they employ toys. This application is truly an analysis and requires all the safeguards of that technic. Dr. Conrad believes that in other than an exceptional case the major aim should be the progressive return of the individual to satisfaction and self confidence in participation in normal living. It is the responsibility of the physician to see that the procedure is adapted to the patient's individual problem.

A most delicate and often treacherous part of the treatment is in prescribing the work. It is rarely advisable for the physician to do this alone, and there are dangers in leaving it all to the therapist. Experience teaches us that correspondence to and fro is time consuming and frequently unsatisfactory; nevertheless there should be some sort of joint action, and records should be kept.

In group treatment it is inevitable that various persons often compete for the credit of the cure and for the loyalty of the patient. We hear from nurses, from recreational aids and from occupational therapists "If I had more of a chance, I'm sure I could have accomplished so much more." Sometimes this is pure rationalization. Occasionally it is valid and might well be heeded at the risk of upsetting the routine a bit. The danger of presenting projects too simple for the highly intelligent, cultured and gifted patient should be borne in mind. This requires fine discrimination on the part of the technician and also an understanding of the background and personality of the patient. This information should be available in adequate record form for the therapist.

We are living in an age of specialization. Occupational therapy is a specialty and as such must bear the

4. McGraw, R. B., and Conrad A., quoted by Backmeyer, A. C., and Hartman, G.: The Hospital in Modern Society, New York, Commonwealth Fund, 1943.

criticism as well as the praise due it. Some say that society, industry and medicine have all been overspecialized, and it is therefore somewhat of a paradox that the cry of "back to the patient" has been raised in the past decade. In opposition to the overspecialization is the precept "Treat the whole patient, not just his disease." Occupational therapy is much involved at this point.

Occupational therapy can help people find a better use of their leisure time. Illness and convalescence, even mental illness, such as neuroses and psychoses, provide a convenient opportunity to introduce this principle. Interest will develop in the creative arts and crafts and in craftmanship, and perhaps also in cooperation with others.

The "joint action" mentioned in this article is accomplished at St. Luke's Hospital by using requisitions which state diagnosis and occupational therapeutic precautions for each patient. These requisitions are made out and signed by the physician in charge of the case. They are supplemented by frequent visits of the psychiatrist to the occupational therapy department and by notes on the clinical record made by the occupational therapist.

The occupational therapist uses a great deal of recreational therapy through the monthly parties and dances for the patients, through games and through social activities.

Functional occupational therapy is usually given in a workshop, which, in a general hospital, should have large enough floor space to assist in the restoration of articular and muscular function in order to build up physical endurance and to aid in the whole physical and mental rehabilitation of physically handicapped patients. In these cases the coordination of the physical and occupational therapy departments is most important. St. Luke's Hospital is planning to enlarge the floor space of the occupational therapy department.

Rehabilitation is the planned attempt, through the use of all recognized measures under skilled direction, to restore those persons who, because of disabilities, do not assume to the greatest possible extent and at the earliest possible time that place in the productive stream of society of which they are potentially capable.[5] Rehabilitation of the injured must therefore start at the patient's bedside and must be continued during and after the patient's stay in the hospital.

Rehabilitation of the injured requires the cooperation of many services, such as surgery and psychiatry.

Often patients have a psychologic protracted convalescence, and it is therefore necessary to use psychotherapy. The Physical Medicine Department of St. Luke's Hospital employs Solomon's[6] method in these cases. It has four major divisions:

1. Psychologic understanding of the patient's character in order to avoid emotional trauma to his personality during all his professional and industrial contacts.

2. Psychiatric evaluation of the patient's emotional problems, both related and collateral to his accident, in order to clarify the dynamic meaning of his attitudes and make him understand his own behavior.

3. Careful supervision of all the psychologic aspects of his return to employment so as to avoid maladjustment and, if possible, improve his previous work adjustment.

4. Institute at the first evidence of psychologic protracted convalescence a recreational and exercise program.

Griffiths[7] calls attention to several principles which should be observed in giving functional occupation therapy. He writes:

> The injured man must be divided into two categories. The cripple must have work to do from the outset so that he shall see that he still retains the ability to work. The recoverable must not have any treatment that remotely resembles his daily work, lest his pain or temporary clumsiness should instil in his mind fear for his ultimate recovery.

Prolonged exercise is often better obtained by exercises designed to interest the patient and to divert his attention from the particular group of muscles which we want to exercise. Griffith suggests:

> A choice of exercise is easily made which will achieve the desired movement in each patient without his being conscious that this exercise is deliberately designed to produce that movement. For example, if a group of patients contain one man in whom it is desired to strengthen the vastus internus muscle of the leg by repeatedly bracing the knee, a second in whom it is desired to hyperextend the spine, a third to flex the hip joint, a fourth to raise the arm at the shoulder, these men may be given the simple exercise of bouncing a rather soft football on the floor of a gymnasium hard enough to reach the ceiling. It will be found that, in spite of themselves, the desired movements will be attained time after time during the short period this exercise may be continued.

Functional occupational therapy in St. Luke's Hospital is used in orthopedic and surgical cases in such conditions as fractures, dislocations, strains, sprains, contractures due to burns, lacerations of tendons and peripheral nerve injuries and chronic arthritis and in other injuries. In these cases the prescribing of occupational therapy is based on the fact that the best type of remedial exercise is that which requires a series of specific voluntary movements which form an integral part of a more complex series of coordinated movements for the purpose of securing the end products and thus furnishes direct incentive for sustained effort.

In cases caused by injury it is believed that the occupational therapist would do well in following Kennedy's[8] suggestions that active exercise should be prescribed as soon as the fracture has been reduced, when the method of fixation has been decided on and when the fixation has been effected. A fracture patient enters the hospital as a healthy man with a fracture and not as a man physically or mentally sick. The less he is placed in the category with the sick patient, and the more he is treated as one who was well before the accident and who expects to remain well, the shorter will be his convalescence period. Because a leg is injured is no excuse for allowing the muscles of the neck, back and the three other extremities to deteriorate and to prolong greatly the convalescence.

The fracture patient needs work therapy—not a vacation but a hardening process. Ways and means should be devised to keep his mind and body occupied from the very beginning.

Occupational therapy needs to be introduced much more widely in general hospitals because, according to Kennedy, occupational therapy is many times more valuable than the usual types of physical therapy for these patients. As an occupant of a general hospital, the fracture patient is too often conditioned to becom-

5. Minutes of Conference on Rehabilitation, Council on Rehabilitation, Philip D. Wilson, M.D., chairman, 321 West 42d Street, New York.
6. Solomon, A. P.: Rehabilitation of Patients with Psychologically Protracted Convalescence, Arch. Phys. Therapy **24**: 270 (May) 1943.
7. Griffiths, H. E.: Rehabilitation After Fractures, in Rolleston and Moncrief: After-Care and Rehabilitation, London, the Practitioner, 1943.
8. Kennedy, R. H.: Active Exercise in Fracture Treatment, Arch. Phys. Therapy **22**: 720 (Dec.) 1941.

ing an invalid. Frequently he requires prolonged care to recover from his hospitalization rather than from his injury.

A fracture patient should be taught how to use all joints and muscles in the region of immobilization, commencing on the first day. He should be given general exercises immediately in order to preserve his musculature. While he is in bed he should be given a job that will occupy both his body and his mind and make him feel that he is still part of the moving world. As soon as the fracture patient leaves his bed he should be taught by some form of occupational therapy and, if possible, something similar to the type of work he performed before his accident.

In the curative workshop power reduction factors, such as psychologic inhibitions, pain, fear and fatigue, are eliminated as much as possible.

It is believed that the psychologic inhibitions of the workshop require that the environmental conditions there be superior to those of the man's normal environment. If one can surround the patient in the workshop with a feeling of well being beyond that to which he is accustomed, one will have accomplished a great deal. This sense of well being can be accomplished by interior decoration, orderliness and absolute cleanliness. To motivate a convalescent patient to leave the ease and lazy life of his personal environment requires that he make considerable mental effort, and this effort can be stimulated through the patient's desire to be in a workshop.

Pain can be lessened by cooperation between the hospital staff and the physical therapy department. The physical advantages of the curative workshop situated close to the physical therapy department are obvious. By heat, diathermy, whirlpool bath, massage and muscle stimulation, pain is diminished and exercise is facilitated.

The patient's fear should be eliminated by cooperation between the occupational therapist and the patient's employer. The physician in charge of a department of physical medicine and the occupational therapist should not give testimony about the patient's condition for the insurance company or for the employers before a court or a workman's compensation board. If this is done, the news is spread that the occupational therapy department is trying to get the patient back to work, not for his benefit, but for the insurance company. This causes fear in all the patients and a consequent loss of confidence in the workshop.

The patient's fatigue can be guarded against by cautioning him that no form of work or play should be continued for more than a relatively short time. Fatigue can be measured in the arm by a hand grasp strength test and in the leg by a pull test for the quadriceps muscle. Fatigue may be mental as well as physical, and for this reason a curative workshop should have both recreational therapy and exercise classes.

Recreational therapy, through competitive games, can often supply the desired exercises that the patient requires. The devices used may be a checkerboard on the floor or wall, darts, pingpong, horseshoes and pool tables.

Recreation gives mental relaxation after the workshop. Games are played with the technician and are manipulated in such a way that the patient is encouraged to strive against and to excel the technician. During rehabilitation of an injured man, one may spend a long period of time training him vocationally, but if he is unable to achieve his proper position under social conditions he will never become really rehabilitated. A man must be helped to adjust himself to a group and to be at ease in conversation with his companions so that he can join in the games of the group and become a part of it. Citing one example: A man came to the department with an artificial hand. Although we were successful in encouraging him to use both his hand and his arm to saw wood, to hammer nails and to do a pretty good job in the wood working shop, he did not feel at ease socially and kept his artificial hand in his pocket when not in actual use. It was not until he found he excelled at the pool table that he realized that although he had an artificial hand he was on a par with others. Thus, social accomplishment played an important role in his future life.

Classes in remedial exercises not only give therapeutic exercises but may eliminate mental fatigue. Dr. Storms in his Workmen's Compensation Clinic in Toronto, Canada, makes excellent use of these classes. He conducts classes for leg exercises from 9 to 9:30 a. m. and 1:30 to 2 p. m., foot classes from 9:30 to 10 a. m. and 2 to 2:30 p. m., hand classes from 10:45 to 11 a. m. and 3 to 3:15 p. m., and arm exercise classes from 11:30 to 12 m. and 4 to 4:30 p. m. In the leg classes the patients (1) walk over a floorlike apparatus built to simulate uneven ground, (2) walk over a MacKenzie inversion tread, (3) walk over steps of various heights, (4) along a bench 18 inches high and 10 feet long to preserve balance and induce good posture, (5) climb up and down a platform with ladders on both sides 5 feet high, five ladder rungs to climb to the top where there is a platform 3 feet long protected on the sides by 30 inch high hand rails, with another ladder on the end, so that it necessitates climbing up five rungs and down five rungs (fig. 1), and (6) work on a treadmill with hand rails. These classes are organized into groups, and every man with a leg disability attends the leg exercise classes as soon as he is able to do so. The hand and arm groups complete hand and arm exercises with the patients sitting in chairs.

In the treatment of the injured workman, Griffiths'[9] observations on the conditioned reflex of industry should always be observed. He says in part:

> The conditioned reflex adds the power producing factor of repetition, and this in the deliberately acquired reflex was originally the result of conscious effort. Impulsive action, although not a truly acquired conditioned reflex, is produced by the cortical memory of deliberate action freed by practice from psychological inhibitions associated with conscious deliberation. Deliberate action becomes an effort of will power or thought; but for deliberate muscle action to be developed into a state of skilled muscle action a period of training is necessary, requiring concentrated mental effort and practice, and this can only lead to the desired skilled action as experience is obtained. Finally, something more is needed before the skill becomes expert. This extra something is not only experience but represents a definite advance in pure psychical effort.
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> The inhibition of the conditioned reflex may be either external or internal. The external inhibition is produced by some excitatory processes other than the conditioned stimuli in the central nervous system, and of these pain, the anticipation of pain or other fear are of greatest importance.
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> The conditioned reflex of industry is a very complex affair. Take, for example, the skilled carpenter using a saw. The action is one of pushing and pulling the saw, but long practice has produced a conditioned reflex in which each stroke of the saw corresponds almost exactly with the previous or succeeding strokes. The reflex developed is a nice example of negative

9. Griffiths, H. E.: Treatment of the Injured Workman, Lancet **1**: 729 (June 12) 1943.

successive induction, but it is not the simple affair of alternate contraction and relaxation of the biceps and triceps or of the serratus magnus and latissimus dorsi muscles. The beautifully balanced muscle action involved depends on many different conditioned stimuli.

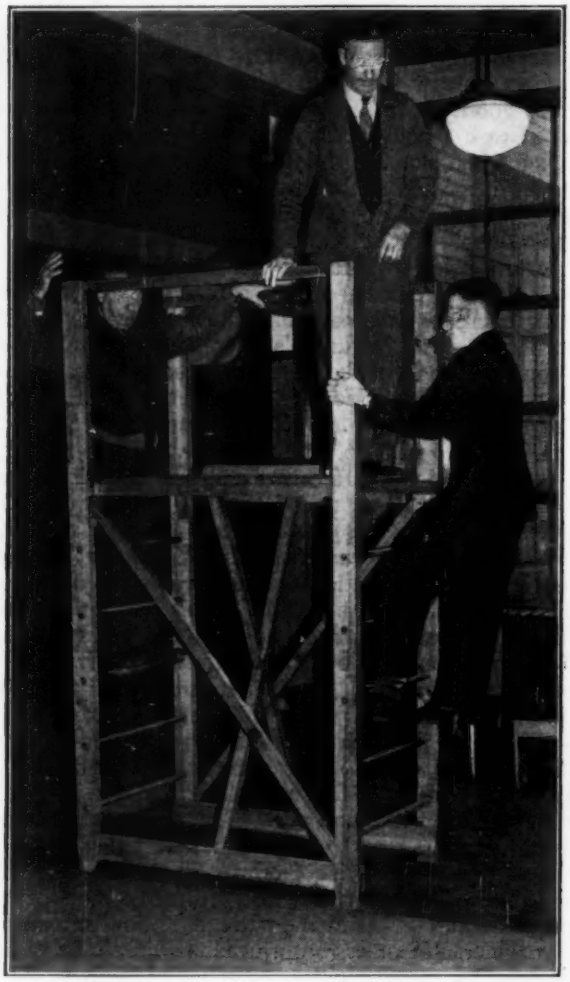

Fig. 1.—Apparatus for leg exercises at Workmen's Compensation Clinic, Toronto.

To mention only a few of these: There are the touch stimuli from both hands. In the saw hand a definite tactile discrimination is associated with the man's own saw (as every tradesman uses his own tools). Thus the same part of the skin of his hand is stimulated every time he grips this particular saw. There is the stimulus of bone vibration set up by the wavelength of the saw being used, so that the farther the saw is thrust the shorter the vibration wave, ultimately suggesting the point at which the reflex action of the thrust shall be reversed. There is in addition the sound reflex, the rasp of the saw, and here again the note alters with the progress of the saw through the wood. When the conditioned reflex is first established a knot in the wood will cause a temporary interruption in the reflex path and tend to throw the muscles out of proper coordination so that there must be a period of conscious action before reflex action is reestablished. But as time goes on the extra resistance of a knot in the wood itself produces a superimposed conditioning stimulus and sets forth a bigger muscular effort without interfering with coordination.

In considering all these industrial conditioned reflexes the law of summation of conditioned reflexes must be borne in mind. This states that when different conditioned stimuli will each call forth a similar reflex, the stimuli acting together will produce a greater effect than they do when acting alone. A conditioned reflex may be reduced but not lost by interference with one of the conditioned stimuli, provided the other conditioned stimuli are sufficiently strong to overcome the inhibiting effect of the lost stimuli.

With the injured workman, bed treatment is only a minor problem. Over 99 per cent of the injured can and should receive ambulatory treatment, and this must be designed to ensure that they use their conditioned reflexes and so secure the maximum amount of exercise with the minimum amount of fatigue. Man's ordinary walking gait is a combination of postural reflexes with the stepping reflex and various conditioned reflexes, not the least of which is produced by the sensation of the impact of the ground transmitted through the sole of a shoe or boot. Treatment therefore must be aimed at restoring normal walking conditions at the earliest possible moment.

Finally we come to the question of vocational exercise associated with the patient's work. This aspect of treatment must be attempted only when its practice will not produce any of those factors which inhibit the conditioned reflexes which are the foundation of his skill.

As an example take the carpenter who has an injured wrist and is asked to use a screwdriver. The normal action of driving a screw is for him a conditioned reflex, but pain inhibits this reflex action and it does so in this way: In the first turn made, perhaps the normal conditioned reflex was obtained, but with it pain; the movement now becomes conscious movement and the anticipation of the pain produces a static

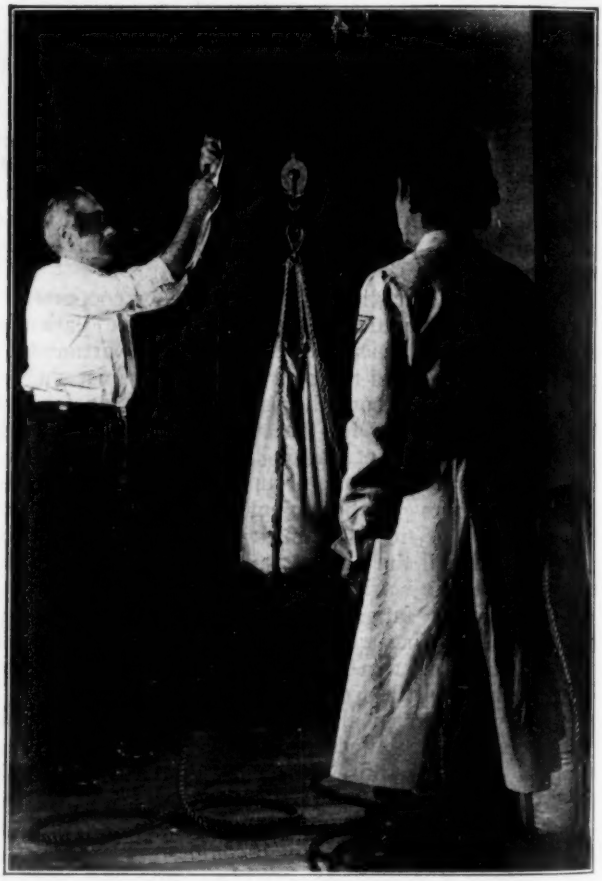

Fig. 2.—Apparatus for arm and shoulder muscles. A sign painter exercising his grip and shoulder muscles at Rehabilitation Center, Boston.

contraction of muscle to resist the anticipated movement. This inhibits the conditioned reflex with resultant incoordination of muscle action and loss of power. But the effect does not end there. With pain and work linked in the man's mind, fear is born—the fear of incapacity for work—and this fear still further inhibits the conditioned reflex. It has been a mistake, therefore, to attempt to restore the conditioned reflex of the

man until the arm has become relatively free from those factors of pain and stiffness which would inevitably inhibit the desired action.

What has been said of vocational therapy applies equally to so-called "light work." The man has been given work of a

Fig. 3.—Gravel box and adjustable fence apparatus for reconditioning an industrial conditioned reflex at Rehabilitation Clinic, Boston.

lighter character in his own trade before he is sufficiently free from pain and while still liable to early fatigue. As a result, he develops inhibition of his previously work-conditioned reflexes, leading to increased clumsiness and to despondency. If he has not been employed at the lighter forms of his old job, all too often he has been given work which involves industrial degrading—a bricklayer becomes a tea-boy—and one of his worst fears is realized. His mind now becomes so concentrated on the injured part that subconscious movement becomes almost impossible and the most rapid road to recovery—restoration through exercise—is barred to him.

We are enlarging the floor space of St. Luke's Hospital Curative Workshop to give our patients the necessary work to take advantage of the industrial conditioned reflexes. Dr. Storms in the Workmen's Compensation Clinic at Toronto, Canada, gives his patients occupational therapy that eventually works into industrial conditioned reflexes.

Following are some examples of Dr. Storms's occupational therapy workshop: A bricklayer with a disabled hand was given a thousand bricks and told to arrange a part of them in a design on the floor first. Later the bricklayer was handling all the bricks without mortar, to build walls. He knew how many bricks he needed to handle at his job each day, and from the number he was able to handle each succeeding day in the workshop he saw how he was improving and how close was the time of his return to work. A sign painter was ready for work, except that his grip and shoulder muscle were not strong enough for him to pull on the ropes that raised and lowered his swinging scaffold; Dr. Storms rigged overhead a compound pulley and had the patient pull on a rope and lift weighted bags of sand attached to the other end of the rope, just as was done at his occupation. When he was able to lift a certain weight, the painter was confident that he was ready to return to work.

A brake is also arranged for switchmen in this workshop, and there is a platform built waist high for freight workers. Ordinarily boxes are filled with weighted loads. The disabled patient loads the boxes onto a wheelbarrow and wheels them to another place, where he then unloads. A large tree trunk to saw with cross cut saws is provided for lumberjacks. Wood is split by blacksmiths or other workmen who employ mallets or hammers. A gravel box is provided with a fence that can be varied in height. Laborers who use shovels at their work can shovel gravel over this fence (fig. 3). Dr. Storms has rigged hand and foot levers which are weight regulated by cans or bags of sand attached to the beams for steam shovel operators (fig. 4). Painters are given work with paints and brushes in this workshop.

This principle of occupational therapy sometimes results in rather humorous situations. A tombstone engraver was injured in the arm. In the workshop he was provided with a cutting stone and other tools of his trade. During the course of his treatment he engraved "In loving memory of" and the names of the physical and occupational therapy technicians on a tombstone.

Occupational therapists are required to visit the industries, railroads or other places where the patients had been employed prior to their admittance to the hospital in order to observe men at work in these industries and therefore to be better equipped to devise occupational therapeutic apparatus and to prescribe methods to fit the diasability of the patient with due consideration of his future employment. Therapists should know how hard the men must work in a given trade and what the trade names are for each occupation. If a patient states that he is a "holder-up," the occupational therapist should know that he "holds

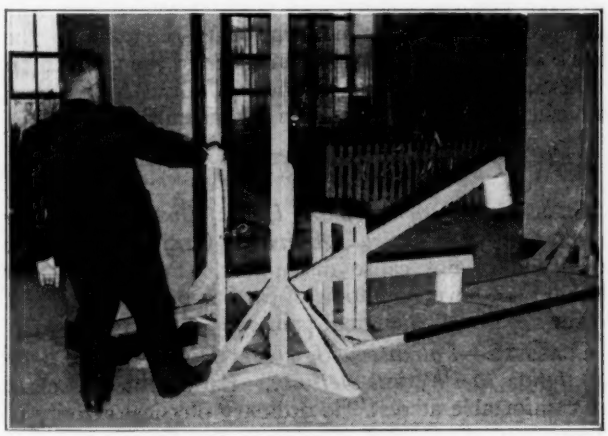

Fig. 4.—Apparatus for reconditioning industrial conditioned reflexes at Workmen's Compensation Clinic, Toronto. A steam shovel operator pulling hand lever where resistant force is regulated by positions of weight attached to beam.

a dolly for the rivet" and should also know what a "dolly" is and weighs, what muscles are affected in this operation, what the joint movements are and what the patient requires in the methods of occupational therapy in order to get him back to his work.

Occupational therapy is one of the best forms of treatment for injuries. It diverts the patient's mind from his injury and improves his morale. Mock[10] stated in a previous edition of the Handbook of Physical Therapy:

> One of the commonest causes for traumatic neuroses is failure of continuous active treatment until the surgeon is assured that his patient is well on the way to an economic end result; that is, able to carry on once more. The diagnosis of a broken back, a skull fracture or a fractured pelvis often strikes fear and dread into the heart of the patient; yet the treatment of these conditions in a large majority of cases is comparatively simple and the end results are extremely good. Many times treatment consists in simply putting the patient to bed and keeping him as quiet as possible from six weeks to three months or, in some cases, in addition to rest, of traction applied to the lower extremities. The surgeon makes his daily round satisfied with the treatment of the physical condition and the progress being made and never recognizes or even dreams of the fear and anxiety that are gnawing at the patient's mind. When the day comes for the patient to leave his bed and begin to move about, the surgeon is disgusted with the lack of cooperation on the part of the patient, the unwillingness to try to help himself and the absurdity of his complaints.
>
> All such patients, in addition to the actual surgical treatment, need properly directed physical therapy and occupational therapy, which are the logical adjuncts to the usual surgical procedures. . . . Occupational therapy keeps a patient's mind and hands employed for a large part of the day, filling in the gaps between the surgeon's visits and the physical therapy and leaving little time for the fears and germs of traumatic neuroses to develop.

CARDIAC CONDITIONS

One of the big workmen's compensation insurance companies recently stated that the patient with heart disease but with good compensation may do well in special placements which do not require physical effort sufficient to aggravate the crippled part. In the average stable industry there are about 8 per cent of the entire personnel who are cardiac patients. This group of trained artisans need not and should not be discarded. With proper medical supervision, with shifting of placement and general oversight, they can continue in active service for many years without shortening or jeopardizing their lives. This group does not include the many persons who die suddenly of a heart attack and who had previously shown no symptoms referable to the heart. Dr. W. D. Stroud, a member of the Council on Industrial Health of the American Medical Association, published a detailed discussion of this subject.[11]

FUNCTIONAL CLASSIFICATION OF PATIENTS WITH HEART DISEASE

CLASS I.—*Patients with Heart Disease and No Limitation to Physical Activity.*—Ordinary physical activity does not cause discomfort. Patients in this class do not have symptoms of cardiac insufficiency, nor do they experience anginal pain.

CLASS II.—*Patients with Heart Disease and Slight Limitation to Physical Activity.*—Patients in this class are comfortable at rest. If ordinary physical activity is undertaken, discomfort results in the form of undue fatigue, palpitation, dyspnea or anginal pain. Competition in athletics and other strenuous activity, even hurrying, are to be avoided. Activity should be graded according to cardiac tolerance. A vocational plan should be made according to the permanent mechanical involvement of the heart.

CLASS III.—*Patients with Heart Disease and Pronounced Limitation of Physical Activity.*—Patients in this class are comfortable at rest. Discomfort in the form of undue fatigue, palpitation, dyspnea or anginal pain is caused by more than ordinary activity. Occupational therapy is first used to induce rest from the cardiovascular standpoint, allowing the circulation to slow down and the reserve power to overcome infections. By this means ultimate damage is minimized. Light activities and a program of graded exercise may later be indicated.

CLASS IV.—*Patients with Heart Disease and Inability to Carry on Any Physical Activity Without Discomfort.*—Symptoms of cardiac insufficiency or of the anginal syndrome are present in patients in this class, even at rest. If any physical activity is undertaken, discomfort is increased. In this class, as in class III, occupational therapy is used to induce rest as well as to decrease anxiety and fear. The program is limited to mental activity and may prove of distinct value as a palliative measure.[12]

In a large general hospital, such as St. Luke's Hospital, the occupational therapy department is frequently ordered to give preventive or diversional occupational therapy to persons with heart disease. It is believed that these patients should be given functional occupational therapy in the curative workshop to improve their general condition, to aid in their mental rehabilitation and to aid their attending physician to prescribe the amount of exercise that his cardiac patient can take. Too often such a patient is sent home from the hospital with such inadequate instructions concerning exercises as "Do not overdo." Although exercise cannot be definitely prescribed, it should not be left entirely to the discretion of the patient. Mackenzie[13] maintains that the object of exercises—the strengthening of the heart muscle—is too often forgotten. He states that, by summarily laying down that so many yards should be walked one day and so many another day, the physician shows that he has failed to take into account the peculiar nature of the heart functions. The power of response of the heart to effort varies greatly in the same individual from time to time—one day a patient with an impaired heart can undertake a great deal of effort with comparative comfort, whereas on other days the same amount of effort causes him distress. This is because the heart may be disturbed by a variety of conditions such as gastric or intestinal disturbances, lack of sleep and the state of the weather. The patient's sensations are therefore a valuable guide and may indicate the amount of effort which can be undertaken by him with safety in all circumstances.

Stroud and Comstock[14] state that patients with organic heart disease who are unable to carry on any physical activity need occupational therapy which gives practically absolute rest from a cardiovascular standpoint. Here, remuneration for articles sold, future vocation and so on should be minor considerations. If practical they should certainly be taken into account, but not at the expense of the main object of such therapy; that is, mental and physical rest in order to

10. Mock, H. E., and Abbey, M. L.: Occupational Therapy, in Handbook of Physical Therapy, ed. 3, Chicago, American Medical Association, 1939.
11. Stroud, W. D.: The Rehabilitation and Placement in Industry of Those Handicapped with Cardiovascular Disease, J. A. M. A. **105**: 1401 (Nov. 2) 1935.
12. Manual of Physical Therapy, War Medicine **2**: 295-329 (March) 1942.
13. Mackenzie, M., and Orr, J.: Principles of Diagnosis and Treatment, in Heart Affections, ed. 2, London, Hodder & Stoughton, 1923.
14. Stroud, W. D., and Comstock, C. R.: Physical Therapy in Cardiovascular Disease, Principles and Practice of Physical Therapy, Hagerstown, Md., W. F. Prior Company.

relieve the circulation of much of the load which the heart must carry. It is the relief from this burden which allows the heart muscle, previously unable to carry on its work of keeping up an efficient circulation, to regain much of its reserve, so that if it is not again asked to carry too heavy a load it may do its work efficiently for many years. Proper occupational therapy, by lightening the burden placed on the circulation by mental and physical activity, may, in children with active infections damaging their heart muscle and heart valves, allow circulation to slow down and thus help these children to call on their reserve to overcome the active infection and minimize the ultimate damage to their hearts. These are the two large groups which come under the class of patients with organic heart disease who are unable to carry on any physical activity, those with active infections damaging the heart and those with already damaged hearts which have been required to carry too heavy a circulatory burden through physical and mental effort and whose hearts have temporarily failed. These authors further state that, when such patients progress so that they are able to carry on diminished physical activity or their habitual physical activity, vocational training with the ultimate object of a definite vocation, and finally placement through a bureau for the handicapped, are as important as is the occupational therapy itself.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN E. SMITH, M.D., *Secretary.*

PENICILLIN.—A solid extract of organic nature obtained from certain molds which possesses the property of being able to inhibit the growth of and even occasionally actually destroy certain bacteria. It may be prepared as several salts, including sodium, calcium and ammonium salts.

Actions and Uses.—Penicillin belongs to a class of agents frequently referred to as antibiotics and antimicrobial agents of biologic origin. At present, penicillin is prepared by culture methods and not synthetically. In finished form the powder usually has a brown or yellow appearance and is marketed in air-tight ampuls. The material is unstable in air, hygroscopic and subject to rapid reduction in potency on exposure to heat and acids. Thus the ampuls are stored in the refrigerator and the contents put into solution only as needed. Penicillin is very soluble in water and in saline and dextrose solutions. At present the potency of penicillin preparations is determined by biologic assays, a method which essentially is concerned with the inhibition of the growth of a certain strain of Staphylococcus aureus in special medium; this is compared with a standard, and the result is expressed in Oxford units. All specimens also are examined for moisture content, freedom from pyrogens, sterility and toxicity.

Penicillin is indicated in staphylococcic infections with and without bacteremia, clostridial infections, hemolytic and anaerobic streptococcic infections, pneumococcic, gonococcic and meningococcic infections, and the complications caused by such infections. It may prove valuable in syphilis, actinomycosis and bacterial endocarditis, but such use is yet in the experimental stage. Subsequent uses depend on current and forthcoming research.

Dosage.—Penicillin may be administered intravenously, intramuscularly, intracisternally and topically. Subcutaneous injections may be painful. Treatment may consist of repeated intramuscular or constant intravenous injections. The contents of an ampul, or ampuls, are dissolved in sterile, pyrogen-free distilled water or isotonic solution of sodium chloride. For intravenous injection, concentrations of 1,000 to 5,000 units per cubic centimeter are prepared for direct injection, or 25 to 50 units per cubic centimeter for constant intravenous therapy; for intramuscular injection, 5,000 units per cubic centimeter of isotonic saline solution; for topical application (not the sodium salt in powder form, as it may be irritating when applied locally), 250 units, or more if infection is severe, per cubic centimeter of isotonic saline solution; for subarachnoid space, 10,000 units in isotonic saline solution in a concentration of 1,000 units per cubic centimeter injected once or twice daily; for empyema, 30,000 to 40,000 units injected after the pus has been aspirated. Penicillin solutions should not be used for irrigation.

The dosage of penicillin will vary according to patient and severity of infection, but the objective is to bring the infection under control as quickly as possible. Inadequate dosage may create penicillin resistance in the invading organisms. Penicillin is excreted rapidly, and injections should be repeated every three or four hours unless continuous infusion is employed. In serious infections with or without bacteremia, an initial dose of 15,000 to 20,000 units followed by constant infusion to supply 2,000 to 5,000 units every hour or, in the absence of constant injection, 10,000 to 20,000 units injected intramuscularly every three or four hours, may be employed. After the temperature has returned to normal, the penicillin may be stopped, but the course of the disease must be watched carefully.

In chronically infected injuries, the dosage may be 5,000 to 10,000 units, or more if indicated, every two to four hours with local treatment as indicated. In no instance should proper surgical intervention be omitted. For sulfonamide-resistant gonorrhea, 10,000 units every three hours intramuscularly or intravenously for ten doses may be administered. Treatment depends on findings of culture of exudate.

WINTHROP CHEMICAL CO., INC., NEW YORK

Ampuls Penicillin Sodium: Each ampul contains 100,000 Oxford units.

PERCOMORPH LIVER OIL (See New and Nonofficial Remedies, 1944, p. 636).

The following dosage form has been accepted:

AMERICAN PHARMACEUTICAL CO., INC., NEW YORK

Codanol Brand Percomorph Liver Oil 50% with Viosterol: 10 cc. and 50 cc. A source of vitamin A and D in which not less than 50 per cent of the vitamin content is derived from the liver oils of percomorph fishes with viosterol added. Each gram contains not less than 60,000 U. S. P. units of vitamin A and 8,500 U. S. P. units of vitamin D.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1944, p. 608).

The following dosage forms have been accepted:

CARROLL DUNHAM SMITH PHARMACAL COMPANY, ORANGE, N. J.

Tablets Thiamine Hydrochloride: 1 mg., 5 mg. and 10 mg.

Solution Thiamine Hydrochloride, 10 mg. per cc.: 1 cc. ampul and 30 cc. vials. Each cubic centimeter contains thiamine hydrochloride 10 mg. in isotonic solution of sodium chloride, preserved with 0.5 per cent chlorobutanol.

TETANUS TOXOID, ALUM PRECIPITATED (See New and Nonofficial Remedies, 1944, p. 565).

The following additional dosage form has been accepted:

GILLILAND LABORATORIES, INC., MARIETTA, PA.

Tetanus Toxoid, Alum Precipitated (Refined): 50 cc. vials (25 immunizations) and 50 cc. vials (50 immunizations). Preserved with merthiolate 0.01 per cent.

SULFAMERAZINE (See THE JOURNAL, May 6, 1944, p. 31).

The following dosage form has been accepted:

E. R. SQUIBB & SONS, NEW YORK

Tablets Sulfamerazine: 0.5 Gm. and 0.25 Gm.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1944, p. 191).

The following dosage form has been accepted:

PREMO PHARMACEUTICAL CO., INC., NEW YORK

Tablets Sulfathiazole: 0.5 Gm.

METAMUCIL (See THE JOURNAL, April 15, 1944, p. 1133).

The following additional dosage forms have been accepted:

G. D. SEARLE & CO., CHICAGO

Metamucil: 4 ounce and 16 ounce containers.

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SATURDAY, OCTOBER 7, 1944

HUMAN TOXOPLASMOSIS

The protozoan parasite Toxoplasma was discovered in the gondi, a North African rodent, by Nicolle and Manceaux in 1909. Protozoologists have found that Toxoplasma is pathogenic for a wide variety of mammals and possibly birds and has an extensive geographic distribution. Although the existence of a large potential reservoir of natural hosts, including dogs, rabbits, squirrels and voles, was known, the first verified human case of toxoplasmosis was reported by Wolf, Cowen and Paige [1] in 1939, just thirty years after the discovery of toxoplasma.

Once the pathogenicity of the parasite for man had been proved, reports of cases of human toxoplasmosis rapidly began to appear in the literature. Wolf and his associates [2] alone reported 9 more cases in the surprisingly short period of three years. Their pioneer studies established the basic features of infantile toxoplasmosis. They were dealing with a disease of young infants, in several instances proved to be acquired in utero and characterized by convulsions, changes in the cerebrospinal fluid, hydrocephalus, multiple calcifications in the brain and involvement of the retina by focal destructive lesions. In patients who survived the acute stage they found persisting or increasing hydrocephalus, nystagmus and permanent impairment of vision and usually some degree of mental retardation. They were much impressed with the destructive and granulomatous lesions in the central nervous system and retina but occasionally found lesions or parasites in extraneural tissues.

Meanwhile in 1940 and 1941 Pinkerton and his associates [3] had reported 3 cases of fatal toxoplasmosis in adults with a different clinical picture resembling typhus and Rocky Mountain spotted fever. But little involvement of the brain appeared in these cases. The main pathologic changes were diffuse interstitial pneumonia and necrotic and inflammatory lesions in many organs. Wolf and his associates encountered similar lesions only once, in a 3 day old infant, and speculated on the possibility of aspiration of toxoplasma infected amniotic fluid to account for the severe pulmonary lesions.

While there is on the surface little similarity between the acute typhus-like disease of adults and the encephalomyelitis of infants, the extraneural lesions occasionally found in infants indicate a pathogenic mechanism common to the two. Sabin [4] had studied the pathogenesis of experimental toxoplasmosis and had shown that following multiplication at the site of entry the parasites are disseminated through the blood stream to every tissue, invading the vessel walls and ultimately the tissues themselves. The involvement of different tissues depends mainly on their susceptibility, regardless of the port of entry of the infection. In human fetuses and infants the central nervous system is especially susceptible. In a recent study based on 3 new cases of infantile toxoplasmosis, Zuelzer [5] points out, however, that extensive changes in the visceral organs of infants may be more common than was formerly assumed. He found widespread lesions, including a severe myocarditis and interstitial pneumonia, besides encephalomyelitis, in an infant which died in the acute stage of the disease, and he was able to demonstrate minute residual lesions in the cardiac and skeletal muscles of a second patient with advanced cerebral and retinal damage. Zuelzer explains the pneumonia by the fact that all parasites must pass through the lungs during the stage of invasion. He states that the extent of the lesions found in the visceral organs depends largely on the stage of the disease. In most of the infantile cases the dissemination of the parasites occurs in utero some time before birth and thus the acute stage of invasion remains hidden. The lesions caused by toxoplasma tend to heal and may largely have disappeared by the time of birth except for the changes in the brain and retina, where the inability of nerve cells to regenerate allows conspicuous permanent lesions to develop. When the infection occurs shortly before delivery or after birth and the stage of invasion can be observed, the clinical manifestations may be expected to be more variegated and the disease more closely resembles adult toxoplasmosis. Further observations are needed before the complete picture of the disease can be drawn.

Early observations indicated that the mothers of infants with congenital toxoplasmosis fail to show evidence of the disease themselves. This was explained

1. Wolf, Abner; Cowen, David, and Paige, Beryl H.: Toxoplasmic Encephalomyelitis, Am. J. Path. **15**: 657 (Nov.) 1939.

2. Paige, Beryl H.; Cowen, David, and Wolf, Abner: Toxoplasmic Encephalomyelitis, Am. J. Dis. Child. **63**: 474 (March) 1942. Cowen, David; Wolf, Abner, and Paige, Beryl H.: Toxoplasmic Encephalomyelitis, Arch. Neurol. & Psychiat. **48**: 689 (Nov.) 1942.

3. Pinkerton, Henry, and Weinman, David: Toxoplasma Infection in Man, Arch. Path. **30**: 374 (July) 1940. Pinkerton, Henry, and Henderson, R. G.: Adult Toxoplasmosis, J. A. M. A. **116**: 807 (March 1) 1941.

4. Sabin, A. B.: Toxoplasmosis, in De Sanctis, A. G.: Advances in Pediatrics, New York, Interscience Publishers, Inc., 1942.

5. Zuelzer, W. W.: Infantile Toxoplasmosis, Arch. Path. **38**: 1 (July) 1944.

after Sabin [4] had perfected a serologic method permitting the demonstration of specific serum antibodies against toxoplasma not only in the patients but several times in their mothers and sometimes in other members of the family. Now it is clear that older persons may have subclinical toxoplasma infections. These findings at once widened the scope of future investigations. In the last five years 27 cases of human toxoplasmosis were reported in the continental United States. The presence of specific antibodies in apparently healthy persons means that the true incidence of human toxoplasmosis may be far greater than the number of clinically or pathologically recognizable cases indicates. This problem must await the development of a simplified method for the serologic diagnosis of the infection. The present method of Sabin seems reliable but not suited to general use.

Toxoplasmosis is rapidly becoming a disease of general interest. Search among the inmates of institutions for the mentally deficient has already yielded a number of previously unrecognized cases. The disease constitutes a known cause of mental retardation and of chorioretinitis. It concerns the neurologist, the ophthalmologist, the pediatrician, the pathologist and the general practitioner.

Much work remains to be done. The life cycle of Toxoplasma is as yet incompletely understood. Its exact classification is uncertain and the natural mode of transmission is obscure. Adequate epidemiologic studies are lacking. The question of vectors has not been investigated. Future studies will show the extent of the problem of toxoplasmosis. Any attack on the disease will have to be along the lines of prevention, since therapy will have little to offer once the irrevocable destruction of brain and retina has taken place.

PENICILLIN EXCRETORY BLOCKADE

Florey,[1] Rammelkamp [2] and others have shown that within an hour after penicillin administration by the intravenous route fully 60 per cent of the injected dose is excreted in the urine. By the end of this time the penicillin concentration of the blood stream falls to zero. Frequent reinjections are therefore necessary to maintain an adequate therapeutic concentration in the blood stream. Diodrast, hippuran and other substances that are known to be excreted mainly by the renal tubules exhibit a similar rapidity of elimination, suggesting the probability that, in addition to being filtered through the glomeruli, penicillin is also excreted in large measure by the renal tubules. If so, the rapid urinary loss could be prevented by therapeutic blockade of the tubular excretory function.

A theoretical basis for such blockade is furnished by the well known mutual depression of tubular excretion by competing chemical agents.[3] When such substances as diodrast, hippuran, phenol red and other similar derivatives are given simultaneously a manifest reduction in the rate of excretion of all injected substances occurs, presumably because of their competition for elimination through a common mechanism. Rammelkamp and Bradley [4] of Boston University School of Medicine therefore tested the effects of simultaneous injection of penicillin and diodrast on clinical patients. The rate of renal elimination was first measured after a single control intravenous injection of 5,000 Oxford units of penicillin. Twenty-four hours later the same patients were given a simultaneous intravenous injection of 5,000 Oxford units and 30 cc. of diodrast. The control 60 per cent excretion of penicillin by the end of one hour was reduced to 20 per cent as a result of the simultaneous injection of diodrast. In the control test the initial penicillin titer of the blood serum fell from 0.312 unit per cubic centimeter to practically zero by the end of forty minutes. As a result of diodrast blockade the forty minute reading was 0.039 unit per cubic centimeter. The average control penicillin excretion of all patients was 57.2 per cent of the injected dose by the end of four hours, which was reduced to 32 per cent as a result of diodrast blockade.

Beyer and his associates [5] of the Department of Pharmacology and Bacteriology, Medical Research Division, Sharp and Dohme, Inc., Glenolden, Pa., have recently tested a second blockading substance, p-aminohippuric acid. This substance was selected because it has remarkably low toxicity. In a typical control test 10,000 Oxford units of penicillin was injected intravenously as a single dose into a nonanesthetized trained dog. In the blockade test p-aminohippuric acid was infused simultaneously with the penicillin. Recovery of penicillin in the urine when p-aminohippuric acid was not administered averaged 78 per cent of the injected dose, falling to a 33 per cent recovery as a result of p-aminohippuric acid blockade. With blockade the plasma concentration does not fall below 0.2 unit per cubic centimeter by the end of two hours, with a two hour zero plasma concentration in the control nonblockade test.

Forty-eight hour experiments were performed on anesthetized dogs, during which both penicillin and p-aminohippuric acid were infused continuously, the infusion rate of the penicillin being 15 units per minute. In the nonblockade control test the plasma titer did not rise above 0.02 unit of penicillin per cubic centimeter during the forty-eight hours. In the blockade test the

1. Florey, H. W.; Abraham, E. P.; Chain, E.; Fletcher, C. M.; Gardner, A. D.; Heatley, N. G., and Jennings, M. A.: Lancet **2**: 177, 1941.
2. Rammelkamp, C. H., and Keefer, C. S.: J. Clin. Investigation **22**: 425, 1943.
3. Smith, H. W.; Goldring, W., and Chasis, H.: J. Clin. Investigation **18**: 263, 1938. Finkelstein, N.; Aliminosa, L., and Smith, H. W.: Am. J. Physiol. **133**: 276, 1941.
4. Rammelkamp, C. H., and Bradley, S. E.: Proc. Soc. Exper. Biol. & Med. **53**: 30, 1943.
5. Beyer, K. H.; Woodward, R.; Peters, L.; Verwey, W. F., and Mattis, P. A.: Science **100**: 107 (Aug. 4) 1944.

titer rarely fell below 0.1 unit per cubic centimeter, a fiftyfold increase in average plasma titer. There appeared to be no pathologic effects attributable to the forty-eight hour combined penicillin blockade therapy. In the opinion of Beyer and his associates the combined intravenous administration of penicillin and p-aminohippuric acid is of sufficient therapeutic promise to warrant clinical trial.

SIMPLIFIED THERAPY OF MENINGITIS

Rammelkamp and Keefer [1] found that penicillin injected intravenously is not excreted into the normal cerebrospinal fluid. From this it has been quite generally concluded that it is necessary to treat cases of meningitis by combined intravenous and intrathecal injections of penicillin. According to Rosenberg and his colleagues [2] of the U. S. Navy Medical Corps, Great Lakes, Ill., this combined treatment has given prompt and effective clinical results. Nevertheless, in their opinion the necessity for such combined therapy has not been established. It has not yet been shown that intravenously injected penicillin is not extravasated in adequate amounts by inflamed cerebrospinal tissues.

Rosenberg and his associates [3] therefore injected 20,000 to 40,000 Oxford units of penicillin intravenously or intramuscularly into each of 8 meningitis patients. From 60 to 140 minutes later they withdrew a sample of spinal fluid from each patient for penicillin assay. They found that, contrary to previous expectation, a considerable amount of penicillin is excreted into the spinal fluid of each meningitis patient. The amounts varied with different patients. The lowest titer was 0.03 Oxford unit per cubic centimeter of spinal fluid and the highest titer 0.35 unit (average titer 0.19 unit).

Rammelkamp and Keefer [4] found that penicillin in human serum in concentrations as low as 0.019 unit per cubic centimeter produces maximum bactericidal effects against Streptococcus hemolyticus and that 0.156 unit per cubic centimeter produces maximum bacteriostasis with Staphylococcus aureus. From these data Rosenberg concludes that the excretion (or extravasation) of penicillin into the spinal fluid of meningitis patients after intramuscular or intravenous injection of sufficiently large doses is adequate for the control of meningitis due to susceptible organisms, without the necessity of a supplementary intrathecal injection.

Hac [5] has recently described a similarly increased extravasation or excretion of subcutaneously injected penicillin into experimentally infected skeletal muscles (Clostridium welchi).

1. Rammelkamp, C. H., and Keefer, C. S.: Am. J. M. Sc. **205**: 343, 1943.
2. Rosenberg, D. H., and Arling, P. A., to be published.
3. Rosenberg, D. H., and Sylvester, J. C.: Science **100**: 132 (Aug. 11) 1944.
4. Rammelkamp, C. H., and Keefer, C. S.: J. Clin. Investigation **22**: 425, 1943.
5. Hac, L. R.: J. Infect. Dis. **74**: 164, 1944.

THE PUBLIC RELATIONS SURVEY OF CALIFORNIA

In *California and Western Medicine* for July appears the report of a public relations survey made for the California Medical Association by the firm of Foote, Cone & Belding. After several pages in which Mr. John R. Little justifies the survey and commends the association for having expended the necessary $8,000 to secure it, he turns to the recommendations which result from the survey. This investigation yielded an opinion like that of a similar survey conducted previously by the Opinion Research Corporation for the National Physicians' Committee: the public does not object to prepayment plans. In California it did apparently object to the prepayment plan then being conducted by the California Physicians' Service. Mr. Little stated that a plan must be developed which will cover between 3,000,000 and 5,000,000 people in California and that it must be built on the finest standards of American business. For this purpose he indicated two necessities: (1) a splendid business executive administrator who must be from business and not from medicine or an allied profession and (2) the creation of a new public relations department to deal with the members of the California Medical Association and county medical societies throughout the state, this also to be headed by a layman. Finally, Mr. Little recommended that all councils in the California Medical Association and in the several county societies be divided into three groups responsible respectively for (1) progress of scientific medicine, (2) medical economics and (3) public relations.

The maintenance of medical standards in medical education and medical practice, the observation of medical ethics in medical practice and the maintenance of the personal relationship between doctor and patient, which have long been considered fundamental to the quality of medical care, are ideals understood by physicians. Economists, sociologists, business executives and insurance agencies seem to have had but little sympathy with these ideals in the past. Mr. Little, in his recommendations to the California Medical Association, follows the line long emphasized by Michael Davis, Isadore Falk and others that the profession of physicians demands merely that he practice medicine and that the terms of his practice, the nature of the distribution of medical service and the conditions of the relationship of the doctor to the hospitals, the clinics, the health centers and similar agencies may well be left to economists and business administrators. Exactly what the California Medical Association will do to make Mr. Little's report effective is not yet apparent.

Mr. Little has apparently been endeavoring to define trends, with the point of view that doctors ought to observe trends and go along with them. There are, however, both favorable and unfavorable trends from the point of view of medical practice. Long ago a

medical philosopher urged physicians to observe well the trend of the disease, and if it be upward and toward health, then to aid the trend and go with it toward recovery; but if the trend be downward and toward death, then the physician should interfere so that he may, if possible, reverse the trend. If there were but one way in which the people could secure a high quality of medical service at a low cost, the problem of the medical profession at this time would be exceedingly simple. There are, however, many different approaches to this problem. There is the former technic of the California Physicians' Service and the changed plan. There are similar but in some respects different plans already in effect in other states. There are the technics now being developed by a variety of private insurance agencies in cooperation with large industries. There is the plan of Mr. Henry Kaiser. There is the possibility of compulsory sickness insurance on a county, a state or a national basis. The most important fact that comes out of Mr. Little's survey is that people in California were not satisfied with the California Physicians' Service up to the time of his survey and that changes seemed to be necessary to satisfy the people. Whether these changes when made will be satisfactory will remain, of course, for time and the California Medical Association to determine.

Current Comment

THE RED CROSS MEDICAL COMMITTEE

This week the American Red Cross announced through its new chairman, Mr. Basil O'Connor, the appointment of a special Medical and Health Committee to survey current Red Cross operations of a medical and health character and to recommend plans for the postwar period. The membership of the committee includes:

Dr. Lewis H. Weed, chairman, Washington, D. C., Division of Medical Sciences, National Research Council.

Dr. Felix J. Underwood, vice chairman, Jackson, Miss., president, American Public Health Association.

Dr. George Baehr, New York, director of clinical research, Mount Sinai Hospital.

Dr. Wilburt C. Davison, Durham, N. C., dean and professor of pediatrics, Duke University School of Medicine.

Dr. Morris Fishbein, Chicago, Editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Dr. Alan Gregg, New York, director of the medical sciences, Rockefeller Foundation.

Major Gen. Norman T. Kirk, Washington, D. C., Surgeon General of the U. S. Army.

Dr. Frank H. Lahey, Boston, national chairman of the directing board, Procurement and Assignment Service for Physicians, Dentists, Veterinarians, Nurses and Sanitary Engineers, Lahey Clinic.

Dr. Roger I. Lee, Boston, President-Elect, American Medical Association.

Vice Admiral Ross T. McIntire, Washington, D. C., Surgeon General of the U. S. Navy.

Dr. Thomas Parran, Washington, D. C., Surgeon General of the U. S. Public Health Service.

Dr. Henry R. Viets, Boston, will act as secretary of the committee. In making his announcement Mr. O'Connor said:

> Medical and health problems touch virtually every aspect of Red Cross activities, whether in terms of disaster relief, nursing, accident prevention, nutrition or blood donations. Because of this vital relationship to the general Red Cross program, I have asked eleven prominent medical and health experts to serve as a special committee to survey what we are doing currently, analyze the results achieved and give me a blueprint of possible Red Cross activities in these fields in the postwar period. The group appointed was chosen because of their familiarity with operations of the American Red Cross in the medical and health fields.

The medical profession may await with interest the reports of this group. The blood donor service, the nursing services, the nutrition, first aid, disaster relief activities, the home services and those functions dealing with medical supplies all come closely to problems that affect the medical profession. Chairman Basil O'Connor merits commendation for having enlisted medical interest and sought competent advice in developing the innumerable medical activities of the American Red Cross.

WILLIAM GILBERT—PHYSICIAN TO QUEEN ELIZABETH

William Gilbert, who was physician to Queen Elizabeth and James I of England, was born about four hundred years ago. The place of Gilbert in the medical world has been described recently by Sir Walter Langdon-Brown.[1] Gilbert's influence on the medical profession of his day was profound: he insisted on observation and experiment, and he scorned reliance on mere authority; he demonstrated hatred for sham and quackery and was far in advance of his times in condemning some of the extraordinary prescriptions of the day. He recognized the value of iron "as a fine powder steeped in the 'sharpest vinegar' and dried, for the treatment of anemia." While remaining prominent in medicine, Gilbert demonstrated a notable versatility. His masterpiece, "De magnete," has become recognized as a great pioneer work on magnetic and electrical experiment; he has been called "the father of the sciences of geomagnetism and electricity."[2]

INTRANASAL VACCINATION FOR COLDS

Studies on the possible value of bacterial vaccines for the prophylaxis of the common cold continue. Now Cowan and Diehl[3] report observations on three groups of students given different types of "cold" vaccine administered intranasally by atomizer and one comparable control group similarly receiving a sterile isotonic solution of sodium chloride containing merthiolate 1:20,000 and just enough fluorescence to render the solution faintly colored and turbid. Significant differences in severity or duration of colds or in frequency of complications between the groups were not observed. Thus this carefully controlled study of intranasal vaccination fails to furnish any evidence of the value of intranasal vaccination for colds.

1. Langdon-Brown, Sir Walter: Nature **154**: 136 (July 29) 1944.
2. Chapman, Sydney: Nature **154**: 132 (July 29) 1944.
3. Cowan, D. W., and Diehl, H. S.: Ann. Otol., Rhin. & Laryng. **53**: 286 (June) 1944.

MEDICINE AND THE WAR

ARMY

AVIATION MEDICAL EXAMINERS

Graduating exercises were held at the School of Aviation Medicine, Randolph Field, Texas, on July 26, following completion of the course for aviation medical examiners. The list of medical corps students graduating follows:

ALABAMA

John R. Chapman, Captain, Good Water.

CALIFORNIA

Albert N. Anton, Captain, Los Angeles.
George E. Beckerman, Captain, Santa Monica.
Lewis T. Bullock, Major, Los Angeles.
Rex N. Carr, 1st Lieut., San Mateo.
Lee D. Fulton, Captain, San Francisco.
Alfred E. Gardner, 1st Lieut., Ignacio.
Robert W. King, Captain, San Jose
Charles I. Morris, Captain, San Francisco.
Seymour A. Spungin, Captain, Los Angeles.
Ernest M. Stanton, 1st Lieut., Santa Monica.
Orville O. Witherbee, Captain, Los Angeles.

COLORADO

Orin M. Stout, Major, Denver.

DISTRICT OF COLUMBIA

Francis T. Coleman, Major, Washington.
Abraham B. Mincosky, 1st Lieut., Washington.

FLORIDA

Francis T. Holland, Captain, Tallahassee.
John L. Jennings Jr., Captain, Bocagrande.
James E. Kendrick, 1st Lieut., Homestead.

GEORGIA

Ottis E. Hanes, Captain, Atlanta.
James M. Sutton Jr., Major, Sylvester.

ILLINOIS

John I. Brewer, Lieut. Col., Chicago.
George J. Cooper, Captain, Chicago.
Philip Lerner, Captain, Chicago.
Clifford H. Peters, Captain, River Forest.
William C. Scott, Captain, Elkville.
Carel van der Heide, Captain, Chicago.

INDIANA

John W. Humphreys, Major, Vincennes.
Edward C. Lidikay Jr., Captain, Lodoga.
Thomas O. Middleton, 1st Lieut., Vincennes.
Robert H. Williams, Captain, Anderson.

IOWA

Edward E. Anderson, Captain, Dubuque.
Walford D. Marrs, Captain, Tabor.

KANSAS

Shirley E. Clark, 1st. Lieut., Rush Center.
Arnold H. Janzen, Captain, Buhler.
Darwin C. Reed, Captain, Wichita.
Eldee L. Schneider, 1st Lieut., Dodge City.

KENTUCKY

Robert C. Bateman, Captain, Springfield.
William C. Buschemeyer, Captain, Louisville.

LOUISIANA

William H. Byrne, Captain, New Orleans.
Joseph D. Kirn, Captain, New Orleans.
William T. Yates, 1st Lieut., Baton Rouge.

MAINE

Paul V. Davis, Major, Bridgton.

MASSACHUSETTS

Donald V. Baker Jr., 1st. Lieut., Uxbridge.
John K. Brines, Captain, Wellesley.
Henry C. Thacher, Captain, Yarmouth Port.

MICHIGAN

Thomas E. Gibson, Major, Ithaca.
Warren V. Hinshaw, Captain, Adrian.
Alfred E. Thomas Jr., Captain, Detroit.

MINNESOTA

Carl L. Lundell, 1st Lieut., Cloquet.

MISSISSIPPI

Robert G. Head, Captain, Mendenhall.

MISSOURI

Francis O. Trotter Jr., 1st Lieut., Kansas City.

NEBRASKA

Verne H. Alder, Captain, Omaha.
Robert J. Morgan, 1st Lieut., Alliance.
Claude W. Otto, 1st Lieut., Aurora.
Ward A. Peterson, Captain, Omaha.
Alvin F. Sonnenberg, Captain, Lincoln.
Lavern D. Sprague, 1st Lieut., Omaha.

NEW HAMPSHIRE

Frank D. Elkavich, Major, Troy.

NEW JERSEY

Joseph A. Buchignani, Captain, Newark.
Maurice P. Charnock, Major, Trenton.
Charles Kliegerman, 1st Lieut., Atlantic City.

NEW MEXICO

Daniel H. Cahoon, Captain, Roswell.

NEW YORK

Louis F. Bishop Jr., Lieut. Col., New York.
Homer T. R. Bull, Captain, Geneseo.
Alvin M. Cahan, Captain, New York.
Ward V. Ceilly, Major, Brooklyn.
Clyde K. Conrad, Major, Chappaqua.
Cornelius J. Dwyer Jr., Captain, Brooklyn.
Samuel Feinberg, Captain, Port Jefferson.
Allan L. Friedlich Jr., 1st Lieut., New York.
Jack H. Galen, 1st Lieut., Brooklyn.
Roger H. George, Captain, Verona.
Bernard C. Glueck Jr., Ossining.
George Goldstein, Captain, Brooklyn.
Basil C. Gray, Captain, New Berlin.
Max S. Konigsberg, Captain, New York.
Sidney Kreinin, Major, Brooklyn.
Irving L. Leff, Captain, Kew Gardens.
William W. Pierce, Major, Gasport.
Bradley W. Prior, 1st Lieut., Buffalo.
Shepard Quinby, Major, Hamburg.
John R. Roche, Major, Laurelton.
Irving M. Rollins, 1st Lieut., Forest Hills.
Robert S. Siffort, 1st Lieut., Brooklyn.
Willard L. Smith, 1st Lieut., White Plains.
John M. Tortora, Captain, Brooklyn.

NORTH CAROLINA

Thomas E. Andes, Captain, Leaksville.
Henry Lihn, Captain, Fairmont.
William C. Parks, 1st Lieut., High Point.

OHIO

Alfred W. Erb, Captain, Piqua.
William M. Garrett, Captain, Frankfort.
Gordon H. Hammill, Captain, Euclid.
John A. Kramer, Captain, Columbus.
Thomas E. Miller, Captain, Ironton.
Frank D. Novy, Captain, Euclid.
Samuel M. Schall, 1st. Lieut., Toledo.
Carl F. Schilling, 1st Lieut., Cincinnati.
Frederick S. Spiegel, Captain, Cincinnati.
Ralph W. Tapper, 1st. Lieut., Dayton.
Robert E. Tschantz, Captain, Hartville.

OKLAHOMA

Hillard E. Denyer, Major, Chandler.
James W. Downey, 1st Lieut., Chickasha.
Ralph W. Morton, Captain, Sulphur.
Leonidas W. Payne, Major, Pauls Valley.
Harold B. Witten, Captain, Haral.

OREGON

Richard W. Leong, 1st Lieut., Portland.

PENNSYLVANIA

Edward R. Deverson, Captain, Pittsburgh.
Milton H. Graditor, Captain, Cononsburg.
Newton W. Hershner Jr., Captain, Mechanicsburg.
John M. Hickes, 1st Lieut., Glassport.
Earle C. Jameson Jr., Captain, Philadelphia
Thaddeus A. Nigborowicz, 1st Lieut., Gallitizen.
Frank T. O'Brien, 1st Lieut., Scranton.
John J. O'Keefe, Major, Bala-Cynwyd.
Emil E. Reiss Jr., Captain, Pittsburgh.
Henry Rothkopf, Captain, Philadelphia.
William L. Schaefer Jr., 1st Lieut., Middletown.
William I. Westcott, Captain, Doylestown.

TEXAS

George W. Berry, 1st Lieut., San Antonio.
Richard E. Nicholson, 1st Lieut., Dallas.
Fred P. Robbins, Captain, Randolph Field.
Gus C. Yelderman, Major, Rosenberg.

VIRGINIA

Charles R. Mills, Captain, Bristol.
Hugo A. Sacchet, 1st Lieut., Clifton Forge.

WASHINGTON

Ralph M. deBit, Captain, Kennewick.

WEST VIRGINIA

James R. Goodson, 1st Lieut., Davy.

WISCONSIN

Richard D. Champney, Captain, Milwaukee.
William B. Cheeseman, 1st Lieut., Madison.
Edward Zamil, Captain, Milwaukee.

The following officers are in the Colombian army:

Rafael Arturo Botero, Captain,
Luis A. Gomez, Major.

In addition there was one member of the Medical Corps of the Chilean Air Force: Lieut. Col. Luis C. Vivanco.

ARMY AWARDS AND COMMENDATIONS

Colonel Clifford V. Morgan

The Legion of Merit award was recently presented to Col. Clifford V. Morgan of Washington, D. C., for "services in the Office of the Undersecretary of War from September 1940 to March 1942. As chief of the Commodities Division, Resources Branch, and its representative in the Army and Navy Munitions Board, he was charged with the responsibility of determining the needs of the armed services and of essential industries for strategic, critical and essential materials required for the vastly expanded production program, and, according to the degree of their scarcity, to initiate measures designed to insure their proper and most efficient allocation. As the emergency became more acute he, because of his comprehensive grasp of the entire munitions problem, his executive ability, powers of perception and analysis, and his great tact in securing adjustments with the numerous boards and committees of other agencies of the government and with authorized representatives of industry, contributed materially to insuring supplies of the vitally needed materials without which the expanded war production program could not have been accomplished." Dr. Morgan graduated from the University of Nebraska College of Medicine, Omaha, in 1927 and has been in the service since August 1928.

Major Edward A. Kelly

The Silver Star was recently awarded to Major Edward A. Kelly, formerly of Washington, D. C. The citation states that Major Kelly, who was assigned to the ship's hospital, "distinguished himself when, after the ship had received a direct hit by an aerial bomb, he administered medical aid to wounded personnel under risk to his own life. The bomb had smashed the ship's dispensary, and he engaged in giving aid to the wounded on the decks despite confusion and pandemonium caused by the explosion and the resulting fire, smoke and escaping steam. As the ship began to list he carried many wounded men from the starboard to the port side, inflated their life belts and lowered them into the water by means of ropes. He continued to work until practically all living personnel were evacuated. Major Kelly was taken into a lifeboat after four hours in the water and in the lifeboat rendered medical aid to wounded there and helped load them aboard a rescue ship. When he was taken on the rescue ship he resumed the task of giving medical aid and worked steadily until all the wounded were cared for, eleven hours after the troopship had been hit. His absolute devotion to duty in the face of danger and under extremely difficult conditions are consonant with the fine traditions of the American military service." Dr. Kelly graduated from Georgetown University School of Medicine, Washington, D. C., in 1934 and entered the service June 20, 1942.

BRUNS GENERAL HOSPITAL BECOMES TUBERCULOSIS CENTER

The Bruns General Hospital, Santa Fe, N. M., under the command of Brig. Gen. Larry B. McAfee, has been designated as an army center for the treatment of tuberculosis. The hospital is specially staffed with tuberculosis experts and utilizes the most modern equipment and methods of treatment. Bruns General Hospital was named in honor of Col. Earl Harvey Bruns, who was one of the most distinguished phthisiologists in the history of the Army. As chief of medical service at Fitzsimons General Hospital, Denver, which is also an army tuberculosis center, he introduced much of the therapeutic practice now in effect there and trained many officers in the principles of tuberculosis control.

APPOINTED POST SURGEON

Major Nicholas R. Locascio, formerly of New York City, has been appointed post surgeon and commanding officer of the Army Station Hospital at Pine Camp, New York, succeeding Col. Dunlap P. Penhallow. In active service in the Reserve Officers Corps since 1931, Dr. Locascio reported for active duty June 2, 1941. He entered the service with the rank of captain in 1935 and was promoted to major in 1942.

MISCELLANEOUS

NEUROPSYCHIATRY IN THE JAPANESE ARMY

Interview at the Japanese Prison Camp, Blue Beach, Cape Gloucester, New Britain, with Dr. Otsuko Hideo

Lieutenant Commander T. E. Newell (MC), U.S.N.R.

(Interpreter, 2d Lieut. Harry T. Foote, U.S.M.C.R., Japanese Interpreter Section, Division Intelligence Section, First Marine Division)

Dr. Otsuko is 31 years of age, intelligent, cooperative and congenial. His home is in Tokyo, Japan, where he graduated from medical school at the Imperial University in 1940. Following his four year course in medicine he interned one year in a civilian hospital. He then practiced general medicine in civil life for one and one-half years in Tokyo. I explained that I wished to get information about methods used in psychiatry in the Japanese military forces. He was cooperative in every way.

He has been in military service three years in the army, the first nine months in Japan, then in the Philippines and Rabaul. He spent one year in a military base hospital. He went to Rabaul during January 1943 and for six months was assigned to duty in a field hospital. In the Philippines and Rabaul he was attached to the 1st battalion, 141st Infantry Regiment, but since then he has been in smaller field hospitals. His recent duty has been at Borgan Bay. During battles he has always worked in field hospitals and not on the front lines.

His knowledge of military medicine seemed good and he has apparently had first hand knowledge of subjects on which he was interrogated. His answers were usually prompt, but at times he would think a moment or two before answering to be sure he was right. Very few of the Japanese prisoners with him have seemed reluctant to give us any information desired. They have careful screening of mentally unstable men in Japan before they are sent to foreign duty. This is carried out by trained psychiatrists. They may not be specialists in psychiatry but they usually have at least the rank of major.

Three to 7 per cent of military men are eliminated in Japan because of mental instability. They have "very few neurotics, almost none." He admits some, maybe 1 in 100 or less. As the interview progressed, it was clear that it was a problem with the Japanese as it is with other people.

Disposition of war neurosis cases in the Japanese army is quite similar to that in the German armies in the last war. They are segregated immediately to protect and help the patients themselves and also to prevent a bad influence on their comrades. They try to keep them on their duty, but if they are too nervous they are sent back to field hospitals in the immediate vicinity. They are treated by sedatives sufficient to give them rest and sleep. They are held here for three weeks to one month, at least ten days and, at most, two or three months before being sent back to duty or evacuated. From places like Borgan Bay or Cape Gloucester patients needing further care were sent to a hospital at Rabaul. Dr. Otsuko said these measures are taken to prevent the patients from getting "serious" or "very ill." The treatment and the results vary greatly. When good recovery occurs the men are returned as soon as possible but not usually in less than ten days. Others are retained at field and battalion hospitals and are given sedatives as needed and occupational treatment, which consists of light duty, policing hospital areas and such entertainment as can be had. They are given very considerate attention and "no work of the brain." In foreign duty if they do not recover in about three months they are returned to Tokyo military hospitals and put in what are similar to our "N. P." wards.

The doctor wrote in my note book, in English, the term they use for war neurosis, "krieg neurosis," and I assumed it to be named for them by the Germans. This diagnosis is not considered a very complimentary label for a soldier returning as

unfit for further duty, it probably being similar to the term "fear state" advocated by the Australian medical authorities. These men are treated as all war casualties in Japan as "unfortunate individuals" and the patients feel likewise, whether their disability is mental or physical. In rural and suburban areas the attitude is the same as in large cities. The psychoneurotics in Japan are considered as honorably ill as those with malaria or other such diseases. He said "We are good to our war casualties at home."

All military units are taught and lectured to in regard to defending themselves against mental difficulties as they are against physical diseases. Dr. Otsuko says it is a military policy for the commanding officers to note any unusual acts of the men and try to direct their thinking and conduct on the spot. His impression is that there is usually good cooperation in this regard, and results are said to be good. Dr. Otsuko would not admit at any time that these patients are dealt with in a harsh manner. These methods of observation and early treatment of cases are followed out in field hospitals also.

Thirty per cent of these casualties are returned to duty in the field or from field hospitals. This includes those returning to duty from field hospitals and probably from advanced base hospitals at places like Rabaul. Five to 7 per cent go back to Tokyo; the remainder are held for noncombat duty. This noncombat group comprises about 64 per cent of the total. These figures indicate that the average soldier can hope very little for a gain to be derived from developing a neurosis.

Diseased and run down men succumb to psychoneurosis more readily than healthy men. Dr. Otsuko thinks that the greater the hazards of war, the greater the incidence of mental diseases. Men who have long been in combat operations are more often affected than well seasoned troops with less severe war experiences.

They have trained psychiatrists who go from front to front and from hospital to hospital to take into consideration mental problems of personnel in every phase of warfare from front lines back to the advanced base hospitals.

Men discharged from military service because of war neurosis are put back into civil life at farms or other home jobs available and suitable. Special efforts are being made to rehabilitate these men and get them into suitable occupations.

After the interview the doctor asked that he be given some real nice biscuits and some real butter. He has been allowed special privileges over the other prisoners and to eat apart also. He was given some special foods the boys had on hand but unfortunately the boys had no biscuits.

NEW MEDICAL MEMBERS OF STAFF FOR OFFICE OF VOCATIONAL REHABILITATION

The appointments of Dr. Victor H. Vogel, Surgeon, U. S. Public Health Service, as consultant in psychiatry and Dr. Mark E. Gann, Surgeon (R), U. S. Public Health Service, as assistant regional representative are announced by Michael J. Shortley, director, Office of Vocational Rehabilitation, Federal Security Agency, effective September 1.

As a member of the staff of the physical restoration section of the federal office, Dr. Vogel's activities as consultant in psychiatry will include the organization of programs for the rehabilitation of persons with psychiatric disabilities and mental hygiene programs for all handicapped persons who are clients of state rehabilitation agencies. The federal-state grant-in-aid program for the vocational rehabilitation of civilian disabled persons provides for the inclusion of psychiatric diagnosis and treatment, and Dr. Vogel's consultative services will be available to vocational rehabilitation agencies and agencies for the blind in all states, the District of Columbia, Puerto Rico and Hawaii.

Dr. Vogel is a graduate of the University of Colorado Medical School, 1929. He was granted the degree of master of public health at the Johns Hopkins University in 1940 and received postgraduate training in psychiatry at the Colorado Psychopathic Hospital in 1937-1938, and at the Johns Hopkins Medical School in 1939-1940. He is a certified specialist of the National Board of Neurology and Psychiatry and a fellow of the American Psychiatric Association. Dr. Vogel served as assistant chief, Mental Hygiene Division, and mental hygiene consultant to the states, U. S. Public Health Service, 1940-1942.

Dr. Gann has been assigned to the San Francisco office to assist the state rehabilitation agencies in the inauguration of physical restoration services and to aid in the interpretation of the vocational rehabilitation program to cooperating organizations and professional groups. His services as a consulting medical officer will be available to all states in the western area. Dr. Gann is a graduate of the Johns Hopkins School of Medicine, 1933. He received training in surgery at the Sinai Hospital, Baltimore, in 1933-1938 and engaged in the private practice of general surgery in Baltimore from 1938 to 1943. Prior to his assignment to the Office of Vocational Rehabilitation, Dr. Gann's period of active duty with the U. S. Public Health Service included industrial surgery and participation in the medical care project in the Mobile, Ala., war housing clinics.

PATHOLOGISTS PRESENT MILITARY PROGRAM

It is planned to devote a considerable portion of the 1945 meeting of the American Society of Clinical Pathologists to subjects of primary interest to laboratory officers in the armed forces of the United States, i. e., to military pathology. While the date and place of the meetings are not yet definitely decided, it will most likely be in Chicago about the first week of June.

It is the desire of the program committee that laboratory officers working in military hospitals participate actively in this program. The committee therefore requests that materials which would be of interest for such a program be kept in mind.

If within the course of the next months such materials or data of interest in military laboratory work come to the attention of these laboratory officers and they desire to present them at the 1945 A. S. C. P. meeting, they should communicate directly with Dr. A. S. Giordano, chairman of the Program Committee, American Society of Clinical Pathologists, 531 North Main Street, South Bend, Ind.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, September 30, page 307)

CALIFORNIA

Stanford University Hospitals, San Francisco. Capacity, 372; admissions, 9,588. Dr. Anthony J. J. Rourke, Superintendent (residents—surgery, obstetrics and gynecology, anesthesia, psychiatry, medicine, nose and throat).

MICHIGAN

Eloise Hospital and Infirmary, Eloise. Capacity, 6,432; admissions, 7,095. Dr. Charley J. Smyth, Medical Director (3 residents—medicine, November 1).

NEW YORK

Bronx Hospital, New York City. Capacity, 389; admissions, 8,075. Mr. William B. Seltzer, Superintendent (resident—surgery).

Mother Cabrini Memorial Hospital, New York City. Capacity, 205; admissions, 2,976. Mother Corinna, Superior (interns).

WASHINGTON

St. Luke's Hospital, Spokane. Capacity, 236; admissions, 4,699. Mr. Gordon W. Gilbert, Administrator (intern).

WEST VIRGINIA

Kanawha Valley Hospital, Charleston. Capacity, 165; admissions, 4,414. Dr. G. B. Capitol, President (1 intern, 1 resident—mixed service).

St. Mary's Hospital, Clarksburg. Capacity, 192; admissions, 4,201. Sister M. de Sales, Administrator (2 residents—mixed service).

WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

Mayo General Hospital, Galesburg, Ill.: High Blood Pressure, Drs. Adrien H. P. E. Verbrugghen and Louis N. Katz, October 18.

Camp Ellis, Camp Ellis, Ill.: Diseases of the Intestinal Tract, Drs. Warren H. Cole and Michael H. Streicher, October 18.

Chanute Field, Rantoul, Ill.: Thrombosis, Thrombophlebitis and Anticoagulants, Col. Irving S. Wright, October 18.

ORGANIZATION SECTION

WASHINGTON LETTER

(From a Special Correspondent)

Oct. 2, 1944.

Intensified Venereal Disease Control During Demobilization Discussed

Action of the War Advertising Council in withdrawing its support from the Antivenereal Disease Campaign of the U. S. Public Health Service, because of its "highly controversial nature" and evidence that the drive was "repugnant to many Catholic organizations," received no direct comment from the National Venereal Disease Committee today. The Federal Security Agency, however, has revealed that the campaign has just been explored again fully, with a Catholic committeeman in attendance. Indications were that efforts against the disease are to be intensified in spite of this negative step by one of the important supporting organizations. At the second meeting of the National Venereal Disease Committee, just completed, plans were further explored to keep the disease in check during the demobilization period. The meeting dealt primarily with steps to be taken to reduce the estimated 5,000,000 civilian venereal disease cases and to cut infection rates among military personnel.

The meeting dealt comprehensively with the problem, Lieut. Col. Thomas H. Sternberg discussing the Army aspect, Commander S. H. Schwartz that of the Navy; Dr. J. R. Heller, Bethesda, Md., assistant surgeon of the Division of Venereal Diseases of the U. S. Public Health Service, medical developments; A. E. Kimberling, Louisville, Ky., chief of police, law enforcement technics; Chief of Police Fred Roff of Morristown, N. Y., views of the International Association of Chiefs of Police; Rt. Rev. Howard J. Carroll, assistant general secretary of the National Catholic Welfare Conference, outlining religious aspects of the venereal disease problem, and Dr. William F. Snow, New York, of the American Social Hygiene Association, stressing the need of public education.

La Guardia Describes New York City Health Problems

Mayor Fiorella La Guardia was to describe health problems of New York City when he appeared as a witness this week before the Kelley Committee investigating Aid to the Physically Handicapped, slated to continue through October 2, 3 and 4 at the Federal Court House in New York. The hearing promised many notable developments, according to the chairman, Congressman Augustine B. Kelley of Pennsylvania, who announced that other witnesses include Miss Helen Keller; Arde Bulova, who has endowed a school to train disabled veterans in watch making; Dr. Ernest Stebbins, New York City commissioner of health; Mrs. Anna Rosenberg of the War Manpower Commission, and Dr. Peter Irving, secretary of the Medical Society of the State of New York. The committee moves on to Pittsburgh on October 17 and 18, when industrial health will be investigated. Also called are Robert Lansdale, commissioner, New York State Department of Social Welfare; G. Samuel Bohlin, chief, Bureau of Vocational Rehabilitation; Holland Hudson, secretary, National Council on Rehabilitation; Robert P. Lane, director, Welfare Council of New York City; Charles E. Hoppin, New York State Veterans Commission; Clarence D. O'Connor, superintendent, Lexington School for the Deaf; Michael J. Murphy, New York State Department of Labor; Dr. Herbert J. Stack, director, Center of Safety Education, New York University; Edward Hochhauser, executive director, Committee for the Care of Jewish Tuberculous, Inc.; Dr. Haven Emerson, DeLemar Institute College of Physicians and Surgeons, Columbia University; Miss Ann Lehman, consultant on the handicapped, United States Employment Service; Col. John Smith Jr., director, Institute for Crippled and Disabled; Miss Frances E. Moscrip, inspector, Classes for the Blind, Board of Education, Brooklyn.

Need of Safeguarding War Workers' Health Emphasized

The War Manpower Commission proposes to continue all possible efforts to safeguard the health of war workers as a means of cutting down absenteeism and increasing labor productivity, War Manpower Commission Chairman Paul V. McNutt emphasizes. He declared that there will be no letdown in War Manpower Commission cooperation in the United States Public Health Service program for war workers. Health standards must be maintained in all war plants engaged in producing equipment urgently needed by the Army and Navy, he said.

Evaluating accomplishments in the joint program up to date, he said that investigations had been conducted at 11,000 war plants in twenty-eight states. These had resulted in many recommendations for correction of poor health conditions affecting war workers. On March 1 he reported 162 projects for new hospitals, 409 for hospital additions and 377 for nurses' homes and training facilities; 254 projects for health centers had been investigated and recommended to the Federal Works Agency. Manpower utilization consultants in the field, he said, would be held responsible for reporting to the U. S. P. H. S. on safety and health programs in all war plants, particularly those of "must" plants. A simplified guide helps consultants to spot health problems. A thumb rule approach is given to such safety and health matters as accident and illness prevention through programs of industrial hygiene, hospital and health center assistance, inplant medical and dental services, promotion of sanitary services, mosquito control and anti-venereal disease campaigns.

MEDICAL ECONOMIC ABSTRACTS

INDIANA PREPARES PREPAYMENT PLAN [1]

The 1943 meeting of the house of delegates of the Indiana State Medical Association appointed a permanent study committee on health insurance, which submits its first report for the 1944 meeting of the house of delegates.

The committee "has arrived at the conclusion that the best present solution is the adoption of a state medical association sponsored plan for prepayment for medical service."

Owing to deficiencies in the nonprofit statutes of Indiana and the lack of a special enabling act, "it will undoubtedly be necessary to organize under the insurance statutes of the state either a mutual or stock insurance company or association in order to carry out the recommended proposed program."

"The plan proposed by your committee would provide:

1. For all professional medical, surgical and obstetric services while the patient occupies a ward or semiprivate hospital bed, including anesthesia, x-ray, laboratory and electrocardiographic services.

2. Emergency surgical services in connection with nonhospitalized injuries for the first twenty-four hours.

"These services will be subjected to the following limitations:

1. "Ten month waiting period for obstetric cases.
2. "No obstetric benefits unless family is enrolled.
3. "X-ray service limited to $15 in any one year.
4. "Twenty-one days of medical care in any one year."

Joint arrangements are contemplated with the Blue Cross Hospital service of Indiana for a joint enrolment and subscriber relations.

1. J. Indiana State M. A. 37: 501 (Sept.) 1944.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Annual Meeting to Be Held in May.—The annual session of the California Medical Association will be held in Los Angeles, May 6-7, 1945. Tentatively the Hotel Biltmore has been selected as the hotel headquarters.

Two Cases of Leprosy.—*California's Health* recently reported that 2 persons suffering from leprosy were investigated during June. It was determined that both persons, who had at some time been patients in the U. S. Marine Hospital (National Leprosarium) at Carville, La., are suffering from the disease in an inactive form.

Fund for Needy Physicians.—The Los Angeles County Physicians' Aid Association, which has been conducting a campaign to raise $250,000 to assist unfortunate physicians, announced recently that the $50,000 mark had been reached. The association is a nonprofit corporation and is intended to aid needy physicians of the Los Angeles County Medical Association.

Memorial Plans for Founders of Moore-White Clinic.—When six members of the Moore-White Clinic, Los Angeles, return from military service, plans will be launched to establish a foundation for research and to perpetuate the activities of the clinic. The plans include the construction of a new building in memory of the founders, Drs. Melvin L. Moore, Edward C. Moore and Percival G. White. The last survivor of the founders' group, Dr. Edward Moore, died July 10.

Practical Psychotherapy.—A course of eight lectures in practical psychotherapy was opened on Monday, October 2, at Mount Zion Hospital, San Francisco. The course, which will deal primarily with the treatment of neuroses and mild personality problems, will be conducted by Dr. Jacob S. Kasanin, director of the department of psychiatry at the Mount Zion Hospital. The course will be open to senior medical students of the University of California Medical School and Stanford University School of Medicine, the interns and residents in various San Francisco hospitals and public health service and medical officers of the Army and Navy.

ILLINOIS

Chicago

Commander Coggeshall to Address Joint Meeting.—Comdr. Lowell T. Coggeshall (MC) will address a joint meeting of the Institute of Medicine of Chicago and the Chicago Society of Internal Medicine, October 23, at the Palmer House. His subject will be "Current and Postwar Aspects of Tropical Disease Problems."

Memorial to Dr. Gifford.—On October 12 a memorial convocation for Dr. Sanford R. Gifford, professor and chairman of the department of ophthalmology at Northwestern University Medical School, will be held at Thorne Hall on the downtown campus of Northwestern University at 4:30. Dr. Irving S. Cutter will preside at the convocation and Anan Raymond, LL.B., will speak.

Dr. Marrazzi Goes to Wayne University.—Dr. Amedeo S. Marrazzi has resigned as professor and head of the department of pharmacology, Loyola University School of Medicine, effective November 15, to accept a similar position at Wayne University College of Medicine, Detroit. Dr. Marrazzi graduated at the Bellevue Hospital Medical College in 1928 and has been identified with Loyola University since Sept. 1, 1943.

Personal.—Dr. Orlen J. Johnson, since August 1941 assistant secretary, Council on Industrial Health of the American Medical Association, has resigned to enter a residency in surgery at St. Luke's Hospital, effective September 30. Dr. Johnson, who graduated at the University of Michigan Medical School, Ann Arbor, in 1930, came to the American Medical Association from a position as plant physician of the Chrysler Corporation, Detroit.

MAINE

1945 Session of Maine Association.—The ninety-second annual session of the Maine Medical Association will be held at the Poland Spring House, Poland Spring, June 24-26, 1945.

MASSACHUSETTS

Women Eligible for Harvard Medical School.—On September 25 the board of overseers of Harvard College, Cambridge, approved a recommendation of the faculty of Harvard Medical School, Boston, that women students be hereafter eligible for admission. The recommendation had been previously approved by the Harvard Corporation and will become effective for students entering the school in the fall of 1945. The Harvard Medical School was opened in 1782. The average enrolment is slightly over 500 students.

MICHIGAN

Special Society Election.—Dr. Frank R. Menagh, Henry Ford Hospital, Detroit, is president of the Detroit Dermatological Society and Dr. Clarence E. Reyner, also of the Ford Hospital, is secretary-treasurer.

Personal.—Dr. Warren Bartlett Crane, Kalamazoo, has returned to private practice after almost three years in military service.——John F. Norton, Ph.D., was elected president of the Kalamazoo Tuberculosis Association August 17 to succeed Dr. Benjamin A. Shepard, who resigned because of ill health. ——Dr. Earl F. Lutz, Detroit, has been promoted to associate medical consultant of General Motors. Dr. Lutz, who has served as chief plant physician at the Detroit Diesel Engine Division of General Motors since 1938, will work with Dr. Clarence D. Selby, Detroit, the corporation's medical consultant, and will direct his special attention to the medical aspects of the employment of war veterans.

MISSOURI

Personal.—Dr. Charles A. Brasher, assistant superintendent of the Missouri State Sanatorium at Mount Vernon, has been named superintendent, succeeding Dr. Jesse A. Stocker.——Dr. Lloyd L. Tate has been named health and hygiene director of the St. Louis public schools.

Medical Forum.—On September 20 the 1944-1945 Jackson County Health Forum opened its regular session with a talk by Dr. Arnold S. Jackson, Madison, Wis., on "Worry and Nervous Tension." Other speakers in the series will include:

Dr. Walter C. Alvarez, Rochester, Minn., What Makes Your Stomach Ache? October 18.
Dr. Karl A. Menninger, Topeka, Kan., Psychiatry In the War and After the War, November 15.
Dr. Elliott P. Joslin, Boston, New Discoveries and Management of Diabetes, January 17.
Dr. Alton Ochsner, New Orleans, Varicose Veins—Something Can Be Done About Them, February 21.
Lieut. Col. Philip Lewin, M. C., Backache, Injuries and Sprains, March 21.
Dr. Morris Fishbein, Editor of THE JOURNAL, Chicago, Infantile Paralysis, April 18.

NEW YORK

Medical Broadcasting.—The 1944-1945 broadcasting program of the Medical Society of the County of Monroe opened September 9 over the facilities of broadcasting station WHAM. This is the society's fourteenth season of broadcasting, and the opening broadcast was number 552 in the series. The society claims that its broadcast is among the oldest continuously produced medical broadcasts and is identified on the air as "Rochester's Medical Broadcast."

Changes in State Health Department.—Dr. Elizabeth M. Gardiner, Albany, director of the division of maternity, infancy and child hygiene, retired from state service effective August 31. Dr. Gardiner was director of the division of child welfare in the Rhode Island Department of Health from 1919 until 1923, when she joined the New York State Department of Health staff, serving first as associate director of the division of maternity, infancy and child hygiene and after 1926 as director. Jane E. Dale, Ph.D., has been appointed provisionally to the position of senior nutritionist in the state department of health, serving as supervising head of the nutrition bureau within the division of maternity, infancy and child hygiene.

New York City

The Gross Memorial Lecture.—Dr. Leo Loewe, New York, will deliver the seventh annual Louis Gross Memorial Lecture at the Jewish General Hospital, Montreal, October 25, on "Further Observations on the Combined Use of Penicillin and Heparin in the Treatment of Subacute Bacterial Endocarditis."

Meeting of Anesthetists.—The principal speaker at the meeting of the American Society of Anesthetists at the New York Academy of Medicine, October 12, will be Dr. Carl F.

Schmidt, professor of pharmacology, University of Pennsylvania School of Medicine, Philadelphia. Dr. Schmidt's subject will be "The Newer Concepts of Respiratory Control."

Hospital Flooded.—Three substreet floors of the Reconstruction Hospital were flooded September 10, causing damage estimated at $100,000 to medical supplies and irreplaceable therapeutic equipment. The flood was caused by a break in the main shortly before midnight, September 9, but the valve controlling the flow of water was not located until sixteen hours later. The New York *Times* stated that at the height of the flood 40 feet of water inundated the three floors.

Course for Professional Workers.—"Child Health and the Classroom Teacher" is the theme of a course for teachers and professional workers which opened October 4 and will continue weekly until January 24. Dr. Michael Antell, health officer of the Washington Heights-Riverside Health District, is in charge of the course and the sessions are being held at the Washington Heights-Riverside Health Center of the city department of health. It is sponsored by the New York Tuberculosis and Health Association.

Louis Livingston Seaman Fund.—The New York Academy of Medicine announces the availability of the Louis Livingston Seaman Fund to further research in bacteriology and sanitary science. One thousand dollars is available for assignment in 1944. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman and is administered by the committee of the academy. The fund will be expended only in grants in aid for investigation or scholarships for research in bacteriology or sanitary science and may be made for the securing of technical help, aid in publishing original work and the purchase of necessary books or apparatus. Applications will be received either from institutions or from individuals up to November 1. Communications should be addressed to Dr. Wilson G. Smillie, chairman of the fund, 1300 York Avenue, New York 21.

Mayor's Health Plan Incorporated.—Incorporation papers for the Health Insurance Plan of Greater New York (THE JOURNAL, May 13, p. 161), presented by Mayor Fiorello H. La Guardia, were filed August 31 with the state board of social welfare and the superintendent of insurance. If approved by these two agencies and by a justice of the state supreme court, the papers will establish a nonprofit membership corporation to pay insurance as the Health Insurance Plan of Greater New York. The papers will be filed with the secretary of state when the necessary approvals are obtained, and the plan will then be ready to function. The roster of incorporators includes many prominent names in medicine, it was stated, but does not include the names of representatives of five county medical societies. The United Medical Service, Inc., organized under the guidance of the medical profession and approved by the Medical Society of the State of New York, is circularizing physicians with a letter asking them to participate in this plan, which was also set up this year (THE JOURNAL, May 27, p. 296). In its letter to the physicians the United Medical Service reported that it would pay all bills on the basis of physicians' fees comparable with those in workmen's compensation schedules for subscribers whose incomes are "less than an amount to be determined by your board of directors and approved by the council of the Medical Society of the State of New York. When the subscribers' incomes exceed this amount, physicians will be privileged to make a further charge to their patients in addition to the fees which they will receive from the company." The mayor's tentative proposal has envisioned coverage "to every one who earns up to $5,000 a year," it was stated.

OHIO

Dr. Markwith Ends Term as Health Commissioner.—Dr. Roll H. Markwith, Columbus, retired as director of the Ohio Department of Health on August 21, when his five year term expired, to become assistant medical director of the clinical laboratory owned and operated by Dr. Anson L. Brown, Columbus. Dr. Markwith had been health commissioner since January 1939, when a law enacted by the legislature in that year, reorganizing the state department of health and providing for a five year term for the director, became effective. In August 1939 Dr. Markwith was reappointed. Before becoming state health commissioner he had been health officer of Summit County. Until a new director is appointed by the governor, the department will be in charge of Mr. James E. Bauman, LL.B., assistant director and chief of the legal division. In Ohio the law requires the governor to appoint a director of health from a list of five nominees submitted by the Ohio Public Health Council.

VIRGINIA

Dr. Porterfield Named Health Officer of Richmond.—Dr. Jack B. Porterfield has resigned as director of the bureau of industrial hygiene of the Virginia Department of Health, Richmond, to become director of the Richmond city health department, effective September 16. Dr. Porterfield graduated at University of Virginia Department of Medicine, Charlottesville, in 1933 and has been with the state department of health since 1939.

State Medical Meeting.—The ninety-sixth annual meeting of the Medical Society of Virginia will be held at the John Marshall Hotel, Richmond, October 23-25, under the presidency of Dr. Claude B. Bowyer, Stonega. Included among the speakers will be:

Drs. Frank S. Johns and James B. Stone, Richmond, Congenital Pyloric Stenosis with Series of Cases.
Dr. James Q. Gant Jr., Bethesda, Md., Dermatitis in the Munitions Industry.
Dr. Paul Hogg, Newport News, Erythroblastosis and the Rh Factor.
Dr. Alex F. Hartmann, St. Louis, Further Clinical Studies in Disturbances of Acid Base Balance.
Drs. Challis H. Dawson, Suffolk, and Hubert D. Crow, Courtland, Report of Five Cases of Meningitis Treated Empirically with Sulfanilamide Under Rural and Low Economic Conditions.
Drs. Hugh P. Newbill and Randolph Leigh Jr., Richmond, Nonsurgical Therapy of Epilepsy.
Dr. Frederick E. Hamlin, Roanoke, An Investigation of Allergy in Routine Nose and Throat Practice.
Drs. George Cooper Jr. and Vincent W. Archer, University, Radiation and Neurosurgery in Advanced Painful Malignancy.
Dr. Herbert C. Lee, Richmond, Partial Duodenopancreatectomy: Its Use in the Treatment of Pancreatic Malignancy.
Dr. Wallace E. Herrell, Rochester, Minn., Penicillin.
Dr. Paul D. Camp, Richmond, Congenital Heart Disease.

On Tuesday, October 24, clinics will be conducted under the auspices of the Medical College of Virginia. On Wednesday the Virginia Society of Chest Physicians will hold a luncheon meeting at Pine Camp. Various specialty societies plan luncheon sessions. The Woman's Auxiliary to the Medical Society of Virginia will hold its twenty-second annual meeting in Richmond at the John Marshall Hotel, October 23-24.

Special Examining Board in Basic Science Created.—Members of a three man special board of examiners in basic science, created by the 1944 general assembly to conduct examinations of applicants for licenses to practice the healing arts in Virginia, are Dr. Frank L. Apperly, professor of pathology, Medical College of Virginia, Richmond; Carl C. Speidel, Sc.D., professor of anatomy, University of Virginia Department of Medicine, Charlottesville, and Lucius J. Desha, Ph.D., professor of chemistry, Washington and Lee University, Lexington. The appointments were made by Governor Darden, according to the Richmond *Times-Dispatch*. The tenure of the board is five years. It was set up by the general assembly in the amendment to the healing arts statutes to permit the licensing of chiropractors and naturopaths in Virginia. The newspaper report stated that the purpose of the special board was to meet the objections that the state medical examining board, as now constituted, should not pass on the qualifications of chiropractors and naturopaths. The act specifies that the members of the special board shall be members of faculties of the accredited colleges of the state and shall not be medical practitioners. Examinations by the board will be limited to the basic sciences and shall include only the subjects of anatomy, bacteriology, elementary chemistry, pathology and physiology. The examinations are to be given in November of each year during the five year tenure of the board, with the first planned for November of this year. Under the act creating it the board may give examinations to all applicants for licenses to practice chiropractic or naturopathy who elect to take the special tests in basic science in preference to the more detailed examination in these subjects which is provided under the state board of medical examiners for applicants for licenses to practice medicine. A special provision in the act preserves the right of applicants in the military or naval service who, although otherwise eligible to take the special examinations, are prevented from doing so because of their absence from the state. Except for this exemption the special examinations are available only to those practitioners of chiropractic and naturopathy who were engaged in such practice for a period of one year prior to the effective date of the act, which was July 1. Applicants not in the armed services are required

to apply for the special examination prior to November 1 and to supply the board with satisfactory evidence of eligibility. The exempted servicemen may certify their eligibility at any time within six months after their discharge from the service.

WASHINGTON

Arthur Anderson Dies.—Mr. Arthur Anderson, executive secretary of the Washington State Medical Association for the past five years, died August 7 of coronary thrombosis, aged 47.

Stith Memorial Library.—The Dr. Robert M. Stith Memorial Association has been incorporated for the purpose of establishing a memorial library at Firland Sanatorium, Seattle. The nucleus will be the personal medical library of the late Dr. Stith, who was medical director of the sanatorium during the greater period of its existence, according to *Northwest Medicine*.

WEST VIRGINIA

Changes in Health Officers.—Dr. Ward L. Oliver, Point Pleasant, health officer for district number 3, has been transferred to Morgantown as health officer of Monongalia County. He succeeds Dr. William B. Bailey, who has been transferred to Norfolk, Va.

Dr. Angstadt Named Acting Director of Maternal and Child Hygiene Division.—Dr. Norman G. Angstadt, director of the bureau of county health work of the state department of health, has been appointed acting director of the division of maternal and child hygiene since the recent resignation of Dr. Lenore V. L. Patrick-Chipman (THE JOURNAL, June 24, p. 589).

Health Conference.—On October 16 the annual Northern District Health Conference will be held at the new West Virginia Training Center, Morgantown. Dr. James A. Dolce, Fairmont, director of the Marion County Health Department, will deliver the principal address, on "Public Health in the Schools." A feature of the conference will be the dedication of the training center.

New Clinics to Discover Cancer.—On August 31 Drs. Paul R. Gerhardt, director of the state division of cancer control, and J. Ross Hunter, Charleston, chairman of the cancer committee of the state medical association, conducted "case finding clinics" at Madison and Whitesville. The Boone County Medical Society cooperated in the clinics, arrangements for which were made by Dr. Robert L. Hunter, county health officer; nursing service was provided by the public health service and the Boone-Raleigh Clinic. Of 11 patients examined, 4 were found to have cancer. The clinics were conducted as an experiment. Regular tumor clinics have been established at the Laird Memorial Hospital, Montgomery; Mountain State Memorial Hospital, Charleston; St. Mary's Hospital, Huntington; Bluefield Sanitarium, Bluefield, and St. Mary's Hospital, Clarksburg. A tumor diagnostic clinic is now being organized in Morgantown under the auspices of the Monongalia County Medical Society, and the local medical societies are considering the establishment of similar clinics in Parkersburg and Fairmont. On September 15 64 active cases of cancer were under the care of the recently organized division of cancer control. Provision has been made for handling additional referrals without delay while applications for care through the new division are filed with the local departments of public assistance, and persons need not be receiving aid from this department to be eligible for cancer care. The department of public assistance furnishes information concerning the financial circumstances of the applicant, and the division determines whether the aid should be given. The possibility of developing additional channels through which applications may be made is now being given consideration with a view to speeding up the work of the division.

GENERAL

Call to Hunter College Graduates.—All women physicians who are graduates of Hunter College, New York, are asked to communicate with Ruth Lewinson, 18 East 41st Street, New York 17, president of the Associate Alumnae of Hunter College. The college is making preparations to observe its seventy-fifth anniversary and wishes to reach as many of its graduates as possible.

Funds for Infantile Paralysis During Epidemic.—The National Foundation for Infantile Paralysis on September 3 announced that, up to September 1, $397,639 had been sent to twelve states to assist in defraying expenses incidental to the prevailing epidemic of poliomyelitis. Of the total, North Caroline has received $230,974. A total of $51,311 has been sent to aid foundation chapters in New York State whose funds have been depleted in aiding victims, and another $50,000 has been sent for a similar purpose to Kentucky. Other states which have received financial aid are Virginia, Ohio, Florida, Illinois, Iowa, Kansas, Mississippi, California and Oregon. In other states 50 per cent of funds retained by the foundation's chapters from the March of Dimes has been sufficient to provide proper medical care for all victims regardless of age, race, creed or color. Specially trained physicians were sent into North Carolina, Kentucky and New York, and thirty-five physical therapists were dispatched to fill the needs in fourteen states. A total of 6 tons of wool for hot packs has been shipped into thirteen states and the District of Columbia.

Association of Medical Colleges.—The fifty-fifth annual meeting of the Association of American Medical Colleges will be held at the Hotel Statler, Detroit, October 23-25, under the presidency of Dr. Ewen M. MacEwen, Iowa City. Among the speakers will be:

Drs. George S. Eadie and Wilburt C. Davison, Durham, N. C., Postwar Medical Education.
Dr. C. Sidney Burwell, Boston, Graduate Medical Education in the Postwar Period.
Drs. Donald B. Tresidder, Stanford University, Calif., Coy C. Carpenter, Winston-Salem, N. C., J. Roscoe Miller and George H. Gardner, Chicago, Deceleration of the Teaching Program.
Dr. Gordon B. Myers, Detroit, The Teaching of Physical Diagnosis.
Drs. Loren R. Chandler, San Francisco, William Pepper, Philadelphia, Charles D. Creevy, Minneapolis, Requirement of Internship for Graduation.
Drs. Joseph Turner, New York, and Leverett S. Woodworth, Detroit, The Internship: When to Contact Students: Time of Appointment.
Dr. Daniel E. Hasley, Detroit, The Teaching of Parasitology and Tropical Medicine.
Dr. William Dock, New York, Mixed Task Forces in Medical Education.
Drs. James A. Greene, Houston, George T. Harrell Jr. and Herbert M. Vann, Winston-Salem, Integration of the Curriculum: Overdepartmentalization.
Carlos I. Reed, Ph.D., Chicago, A Study and Analysis of Faculty and Student Opinions of Training in Preparation for the Study of Medicine.

Young Mothers and Rapid Wartime Increase in Birth Rate.—Young mothers between the ages of 20 and 30 having their first child were the principal contributors to the rapid wartime rise in the American birth rate, according to the statisticians of the Metropolitan Life Insurance Company. The chief factor in the rise at the younger ages has undoubtedly been the recent upswing in the marriage rate. A good part of the increase, however, is accounted for by women who had been married for some time but delayed having children until economic conditions became more favorable. Although the general birth rate has increased with unequaled rapidity during the war period, the trend toward small American families as well is still in evidence. Families with five or more children have continued their long term prewar downward trend. Similarly the general trends of reproductivity in relation to the age of the mother have continued essentially along the lines prevailing just prior to the beginning of the war but in more accentuated form, it was stated. It was pointed out that from 1933, when the birth rate in this country reached its lowest point, to 1939, the increase in births was almost entirely concentrated among women under 30. Likewise between 1939 and 1942 white women at ages 20 to 24 "recorded the largest increase in the birth rate, 29 per cent; at ages 25 to 29 the rise was 26 per cent." The rate among women in their early thirties increased by 17 per cent during the war years since 1939, but in the group at the age of 40 or over the birth rate decreased between 1939 and 1942. First births showed a considerably larger wartime increase than any of the later orders of birth. The largest rise occurred among women in their twenties, among whom it amounted to 40 per cent; among women in their thirties the gain was 33 per cent. Families having their second or third child also showed considerable gains during the war period, while the data also indicate a small increase between 1939 and 1942 in the birth rate of fourth children. For children of fifth and higher orders of birth the long term prewar downward trend has persisted, giving every indication that the tendency toward small American families will continue, it was stated.

International Medical Assembly.—The Inter-State Postgraduate Medical Association of North America will hold its twenty-ninth annual International Medical Assembly at the Palmer House, Chicago, October 17-20. Among the speakers will be:

Dr. Bert I. Beverly, Chicago, Spoiled Children.
Dr. James L. Poppen, Boston, Intracranial Aneurysms: Diagnosis and Management.
Dr. Frank H. Krusen, Rochester, Minn., The Abuse of Rest as a Therapeutic Agent.
Dr. W. James Gardner, Cleveland Heights, Ohio, Subdural Hematoma.
Dr. Charles G. Johnston, Detroit, Intestinal Obstruction.

Dr. Harry L. Alexander, St. Louis, Primary Atypical Pneumonia.
Dr. Elliott P. Joslin, Boston, Diabetes Today.
Dr. J. Arnold Bargen, Rochester, Management of Ulcerative Colitis.
Major Gen. David N. W. Grant, the Air Surgeon, Five Wartime Achievements of the Army Air Forces Medical Services.
Dr. Karl A. Menninger, Topeka, Kan., Diagnosis and Treatment of Schizophrenia.
Dr. Frederick A. Davis, Madison, Wis., What the General Practitioner Should Know About Ophthalmoscopic Examinations (the Schneider Foundation eye presentation).
Lieut. Col. Donald McEachern, R. C. A. M. C., Diagnosis and Treatment of Epilepsy.
Dr. Edward J. Stieglitz, Washington, D. C., Geriatrics in Wartime.
Dr. Donald C. Balfour, Rochester, Diagnosis and Treatment of Duodenal Ulcer.
Dr. Julian Deryl Hart, Durham, N. C., Air Borne Infections in Clean Operative Wounds.
Dr. Robert S. Berghoff, Chicago, The Senile Heart.
Brig. Gen. Fred W. Rankin, M. C., Comments on Surgical Methods Used in World War II.
Dr. Edward Weiss, Philadelphia, Psychosomatic Aspects of Problem Cases in the Practice of Medicine.
Dr. Richard B. Cattell, Boston, Colectomy for Ulcerative Colitis.
Col. Byrl R. Kirklin, M. C., Some Common Errors in X-Ray Interpretation.
Dr. Arthur Steindler, Iowa City, Disabilities Resulting from Compression Fractures of the Spine.
Dr. John W. Harris, Madison, The Use and Abuse of Forceps.
Norman T. Kirk, Surgeon General of the Army, Surgical Care of the Battle Casualty.
Dr. Oscar T. Clagett, Rochester, Surgical Treatment of Bronchiectasis.
Dr. Arlie R. Barnes, Rochester, Diagnosis and Treatment of Coronary Sclerosis.
Dr. Frank S. Dolley, Los Angeles, Chest Injuries.

In addition to these presentations, a number of diagnostic clinics will be conducted. At the assembly dinner Dr. Josiah J. Moore, Chicago, Treasurer of the American Medical Association, will, as general chairman of the assembly, give the welcoming address and introduce General Rankin, president of the association, who will speak on "Medical Activities in the Normandy Beachhead Landing." Other speakers will include Dr. Walter H. Judd, congressman from Minnesota, on "Our Prospects for the War and the Peace."

LATIN AMERICA

Health Activities in Latin America.—*Traveling Health Requirements in Canal Zone.*—On September 14 the Panama Canal Health Department issued a statement outlining vaccination and health requirements for traveling in the Canal Zone, emphasizing the need of a smallpox vaccination and freedom from contagious diseases. The quarantine division requires that every one coming into the Canal Zone present a certificate showing that successful vaccination has been performed within the preceding five years. If one does not have a certificate he must be vaccinated by a quarantine physician before he is allowed to enter the zone. The U. S. Foreign Quarantine requires that every person entering the United States must present a smallpox vaccination certificate. If a traveler does not possess one, quarantine officials insist that he be vaccinated before he is permitted to enter the United States. Because most Central and South American countries require smallpox vaccination certificates of incoming travelers, the consuls of these countries will not issue visas permitting entry unless shown a certificate. In 1940 the health department carried out a zonewide smallpox vaccination campaign. Copies of certificates based on this campaign may be obtained from the chief health officer. Record of preemployment vaccination is included in the personnel files of many Canal Zone employees who have come to the Zone during the past two years. Copies based on these records may be obtained from the chief health officer, as may copies based on records sent in the past to the chief health officer from the outpatient clinics of Panama Canal hospitals. The school physician has on file the records of vaccinations he has done on school children, and the district physicians have the records of vaccinations done in their dispensaries. Copies may be obtained from either of these sources. Many Central and South American countries also require a statement signed by a recognized physician certifying that the incoming traveler has been examined and found free of contagious disease. Since these countries will turn back travelers unless they have this statement, the Canal Zone Quarantine will not let a person leave the Zone without such statement if he plans to visit in one of them. For direct travel to the United States or for return to the Zone from the states or from these countries, this statement is not necessary. Statements certifying health may be obtained from any district physician, from the medical clinic of any Panama Canal hospital or from the chief health officer. Each person for whom such a certificate is issued must appear personally before the physician who is to sign the certificate. No other vaccination or health requirements must be met in order for Panama Canal employees or their families to travel. Typhoid-paratyphoid inoculations are recommended for every one, and especially for travel in Central or South America, but are not required. Typhus vaccination is recommended for travel in certain Central and South American countries but is not required. Should there be epidemics or great health risks in these countries in the future, further recommendations will be made by the chief health officer.

Personal.—Dr. Carlos Estevez, formerly director general of sanitation of Guatemala, has joined the Pan American Sanitary Bureau, with headquarters in Mexico, for the study of filariasis.

Penicillin in San Juan.—Twenty million units of penicillin has been given to the San Juan Health Department for use in its campaign against gonorrhea.

Government Services

Name Aides on Rehabilitation

Brig. Gen. Frank T. Hines, Veterans Administrator, Washington, D. C., announced September 3 the appointment of four educators. The names of the appointees are Robert G. Sproul, LL.D., president of the University of California, Berkeley; Rufus C. Harris, LL.D., president of Tulane University, New Orleans; Robert B. Stewart, LL.D., controller of Purdue University, West Lafayette, Ind., and Horace S. Ford, bursar of the Massachusetts Institute of Technology, Cambridge, Mass.

Dr. Doyle Appointed to Industrial Hygiene Division

Dr. Walter E. Doyle, in charge of the bureau of industrial hygiene, Kentucky State Department of Health, Louisville, has been appointed chief of the medical unit, industrial hygiene division, Bureau of State Services, U. S. Public Health Service. Dr. Doyle's appointment was effective October 1. He graduated at the University of Buffalo School of Medicine, N. Y., in 1921.

Funds for School and Child Care Allocated

Federal contributions amounting to $713,707 to help twenty-three communities meet operating costs of school, child care and recreation facilities were announced September 12. Thirteen of the communities were given a total of $554,337 to help maintain school facilities for the year ending June 1945. The Roane County Board of Education at Kingston, Tenn., was allotted $219,131 and five communities in Oklahoma were awarded contributions totaling $227,007, with Tulsa receiving $171,868. Child care programs in Lackawanna and Kenmore, N. Y., near Buffalo, Ecorse, Mich., in the Detroit area, and Fort Belvoir, Virginia, were among the projects assisted.

Funds for Public Works

The President has approved sixty-two new Federal Works Agency projects for financial assistance to war impacted communities to provide hospital, school, recreation and child care facilities. Federal funds allotted total $2,017,050. Fifteen of the projects are for war public works construction. Federal allotments totaling $945,943 were made for this construction. The total cost of the work is estimated at $1,242,349. The applicants are to furnish $296,406. The remaining forty-seven projects represent federal contributions to help defray operation and maintenance costs of hospitals, both general and venereal disease control, public schools, facilities for the care of children of mothers employed in essential work, and recreation programs. The federal contributions for these service projects aggregate $1,071,107. Baltimore was allowed $30,850 to assist in the operation of venereal disease hospital facilities. An allotment of $563,500 to the St. Monica's Hospital and Health Center at Phoenix, Ariz., was increased to $648,500 to expand the project to include a 40 bed contagious disease ward together with a 130 bed hospital building, 30 beds to be reserved for venereal disease patients, and a 78 bed nurses' home.

CORRECTION

Error in Location.—The location of Dr. Bertalan Hoch, whose obituary was reported in THE JOURNAL, September 16, page 187, should have been New York and not Jersey City, N. J.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 2, 1944.

Trial of the Russian Serum for Rheumatism with Unsatisfactory Results

The Empire Rheumatism Council reports that tests with the scanty supply of the A. C. B. serum of Professor Bogomoletz from Russia have not given favorable results. The best that can be said is "not proven." Nevertheless, in view of the high reputation of Soviet medical research, it is possible that, with a more detailed statement of the best methods of use and some lead as to the type of rheumatic disease to which the serum is best adapted, it may be found that the claim advanced can be substantiated. As soon as war conditions allow the Empire Rheumatism Council proposes either to invite a representative of Professor Bogomoletz to visit England or to send a research scientist to Russia to make further investigations.

Death of Sir Arthur Hurst

Sir Arthur Hurst, the great clinician, has died suddenly at the age of 65 from an attack of asthma, a disease from which he was a lifelong sufferer, and British medicine has lost a most original mind. Much of his work was performed despite a continuous state of asthma. At Guy's Hospital he would arrive at 2 o'clock and give himself an injection of epinephrine, break away from his ward round at 3 for another injection and finally have one at 4 before leaving for home, white and tired but indomitable. He was educated at Oxford, where he took a first in the final honors school of physiology. He then went to the medical school of Guy's Hospital, where he had a distinguished career. After qualifying he studied in Munich, Paris and America. At the early age of 27 he was appointed assistant physician to Guy's Hospital with charge of the neurologic department. As a physiologist he had studied at Harvard the work of Cannon on the use of the opaque meal to record the shape of the stomach in casts and he had seen something of the kind attempted on the human stomach in Germany. At Guy's he was a pioneer in the study of the movements of the alimentary canal and the mechanism of pain. He was the first to distinguish two types of constipation—colonic, in which passage through the colon is delayed, and dyschezia (difficult defecation, a word coined for him). In dyschezia the feces reach the rectum in normal time but their evacuation is delayed by insufficient defecation. Neglect to respond to the call to defecation may end in loss of the conditioned reflex in which the rectum contracts and the anal sphincter relaxes. The rectum is found packed with feces at whatever hour it is examined. The patient takes aperients to produce fluid feces which require no effort for evacuation. This work is regarded as a noteworthy contribution to the understanding and treatment of constipation.

His thorough and extensive investigations made him the leading authority on diseases of the esophagus, stomach and intestine. He wrote on these subjects in the textbooks, where he combined knowledge of the latest views on physiology and pathology with minute and original clinical observation. His work on achalasia of the cardia, gastritis, peptic ulcer and ulcerative colitis marked a great advance. He lived to see his views on the medical treatment of gastric ulcer generally accepted. He was a trenchant critic of current errors and debunked many mythical maladies, such as "mucous colitis." He pointed out that the presence of mucus with solid feces was a normal event and that it was a gross error to regard it as evidence of disease. He denounced the "colon laundries" which have become popular in recent years in this country. The colonic douche was an unnatural irritant, and the mucus which came away with the last 20 or 30 pints often administered was not the accumulation of months, as the patient was assured, but a protective reaction against the irritation of the douche. Other mythical maladies exposed by him were movable kidney, gastroptosis and abdominal adhesions. He pointed out that when appendectomy failed to cure chronic pain in the right iliac fossa a second error was made and adhesions were diagnosed. But the majority of abdominal adhesions were harmless. Another mythical malady was intestinal intoxication due to intestinal stasis.

It was characteristic of his work that it always seemed to touch fundamentals and have a message for the general man or the expert in quite another branch of medicine. Thus he not long ago held the rapt attention of the Section of Proctology of the Royal Society of Medicine when he discoursed on Functional Diseases of the Colon and Rectum. His teaching that the so-called pernicious vomiting of pregnancy is hysterical has been adopted by leading obstetricians (THE JOURNAL, May 20, p. 223). Though a kindly man, his zeal for what he conceived to be the truth sometimes made his criticisms at medical meetings devastating.

In spite of his frail health his literary output was large. Some of his numerous articles in medical journals were collected in a book entitled "Essays and Addresses on Digestion and Nervous Disorders." His book "Constipation and Allied Disorders" (second edition, 1919) was translated into French (1912). "Medical Diseases of the War" was published in 1918 and the third edition appeared in 1942. Other books were "The Constitutional Factor in Disease" (1927) and "Functional Disorders" (1920). With a surgeon, M. J. Stewart, he cooperated in writing "Gastric and Duodenal Ulcer" (1929). He enjoyed an international reputation, as was shown by his presidency of the International Society of Gastro-Enterology and an honorary membership in the American Medical Association, the American and Mexican Gastro-Enterological associations, the Belgian Gastro-Enterological and the French Gastro-Enterological Association. From 1927 to 1929 he was president of the Section of Medicine of the Royal Society of Medicine.

Research on Pneumonoconiosis

Though it has long been known that dust was injurious to the miners' health, only in 1918, twenty-one years after the first workmen's compensation act was passed, was silicosis made a "scheduled" disease for compensation, and only in 1934 was the plan extended to include any operation underground in any coal mine. Not until 1943 was it officially recognized that miners, especially in certain parts of the Welsh coal field, might contract disease of the lungs which was not due only to dust containing silica. In February of last year an act was passed to bring into the scope of workmen's compensation all cases of pneumonoconiosis. The way for this legislation was prepared by six years of scientific investigation in the pits of South Wales by a special committee of the Medical Research Council. Its reports resulted in an order compelling the adoption in any mine in South Wales or Monmouthshire of a variety of measures to reduce exposure of the men to dust and the appointment by the minister of fuel and power of an advisory committee on the treatment and rehabilitation of Welsh miners suffering from pneumonoconiosis.

Already measures are being taken to suppress harmful dusts at working places in mines, but the committee considers that further attention is needed to the treatment of affected persons and their restoration to health. Present knowledge is insufficient to enable the committee to advise the introduction of large scale measures; further research into the cause, progress and treatment of the disease is felt to be necessary. Accordingly, the establishment of a research unit with accommodations for about 30 patients is recommended. The work is to be linked, though a central authority, with that pro-

ceeding on other phases of the problem; it is planned to acquire more precise knowledge of the causes and diagnosis of the disease, to develop and apply better methods of suppressing dangerous dust and to resettle and retrain disabled miners to take up more suitable employment. The committee also recommends initial and periodic clinical and x-ray examination of miners. Correlation of the findings with the results of pathologic research into early changes in the lung condition, the progression of those changes and the part played by tuberculosis and other infections will also be studied.

Radical Reforms of Medical Education

In spite of the war, reforms which embrace every aspect of social security are being worked out. As the proposed National Health Service will depend largely on the work of physicians, the government appointed a committee to inquire into the organization of medical schools, particularly as to clinical teaching and organization for research. The result of an exhaustive inquiry is an elaborate report recommending many radical reforms: (1) financial assistance to medical students so that children of ability are not deterred from entering the medical profession; (2) coeducation and filling of all hospital appointments by open competition without any sex bar; (3) whole time professors of medicine, surgery and obstetrics and gynecology in every school; (4) more emphasis on measures that make and preserve a healthy nation; (5) in clinical instruction, more emphasis on fundamental principles rather than on imparting a mass of factual knowledge; (6) after a student has passed the final examination, a junior appointment in a recognized hospital for twelve months before admission to the medical register; (7) postgraduate study a regular feature of general practice.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Aug. 25, 1944.

Vital Statistics of Rio de Janeiro for the First Half of 1944

Provisional data of vital statistics for the city of Rio de Janeiro for the first half of the present year are now available. During this period (mostly summer and autumn in the Southern Hemisphere) the total number of deaths from all causes was 16,989, corresponding to the crude annual death rate of 17.63 per thousand, as the city population computed for July 1 was 1,927,000. From the mean annual death rate of 26.00 per thousand of population for the five year period 1899-1903 this rate has declined to 23.55 for 1909-1913, to 21.95 for 1919-1923 and finally to 16.73 for 1929-1933. During this whole period yellow fever, plague and smallpox have been eradicated and malaria substantially reduced under the leadership of Dr. Oswaldo Cruz and afterward of Dr. Carlos Chagas, thus ending the first phase of the public health work in the capital city of the country. Now a second phase has been opened, the main features of which should be the conquest of tuberculosis, syphilis, typhoid, dysentery, diphtheria and measles and the lowering of infant mortality, the latter mostly of a nutritional and digestive origin. The success of the whole campaign is still waiting for the use of the modern weapons of public health work, especially in adequate intensity and quantity, or with the indispensable continuity. The number of live births registered during the period was 2,865, corresponding to an annual birth rate of 22.69.

The leading cause of death was tuberculosis, with a total of 2,977 deaths in the six months, which would correspond to an annual death rate of 309 per hundred thousand of population (325 in 1943, 312 in 1942 and 316 in 1941). The rest of the "infectious and parasitic diseases" has caused 2,096 deaths in the period, which, together with those from tuberculosis, makes a total of 5,073 deaths (29.86 per cent of the deaths from all causes), or an annual death rate of 527 per hundred thousand of population as against about 95 per hundred thousand for the aggregate of the largest cities of the United States.

Cancer, which has caused 709 deaths, or 73.59 per hundred thousand (72.06 in 1943, 67.34 in 1942 and 66.44 in 1941) has been on a continuous increase as a cause of death since 1903-1907, when the mean annual death rate was 34.75. The second most important single group of causes of death is that of the diseases of the digestive system, represented by 2,690 deaths in the period covered, which would correspond to the annual death rate of 279 per hundred thousand. Diseases of the circulatory system accounted for 2,678 deaths, or the annual death rate of 278 per hundred thousand.

The diseases of the nervous system have caused 651 deaths, or the annual death rate of 67.57 per hundred thousand (65.40 in 1943, 65.94 in 1942 and 71.17 in 1941), the largest contribution being from "intracranial lesions of vascular origin," 461 deaths, or the annual death rate of 47.85 per hundred thousand. Violent deaths were 562, which would correspond to 58.33 per hundred thousand (56.67 in 1943, 65.51 in 1942 and 66.46 in 1941).

Retirement of Professor Austregesilo

Dr. Antonio Austregesilo, one of the leading figures of modern medicine in Brazil, has reached the retirement age after thirty-five years of active duty as professor at the University of Rio de Janeiro. He was the brightest pupil in the school of psychiatrists founded in Brazil by Dr. Juliano Moreira. Beginning as a psychiatrist in a small ward at the modest Praia Vermelha Hospital for the Insane, Dr. Austregesilo shifted little by little to neurology, which was then nonexistent in Brazil and which he established in the country as a new branch of clinical medicine. Thereafter he became a professor of neurology, teaching every morning in the famous twentieth ward of the old Santa Casa Hospital, where this specialty was taught in connection with the university. He made several trips to Europe, where he met the leading neurologists of London, Paris, Berlin and Vienna, as well as to Buenos Aires, where he was rated as the greatest neurologist of Latin America. In recent years the teaching of Professor Austregesilo was centered at the Institute of Neurology, a department of the old Psychiatric Hospital of Praia Vermelha. He has written many papers and monographs and several books, all dealing with neurology, and among his pupils are Mauricio França, Espozel, Teixeira Mendes, Studart, Galotti, Deolindo Couto, Aloysio Marques and Borges Fortes.

Brief Items

Two wards of the Gaffrée-Guinle Foundation Hospital of Rio de Janeiro have recently been set aside for the rapid treatment of syphilis. This is the first hospital service fully equipped in Brazil for this kind of work, and the foundation has decided to develop the service as the need requires.

The Sanitation Division of the Health Department of the state of Rio Grande do Sul has completed an extensive plan to provide water supply services and sewerage systems for several small cities of the state. An important sum has been appropriated to enable the state administration to cooperate with those small cities in the execution of the plan.

Marriages

JOHN SINCLAIR CAMPBELL, Manistee, Mich., to Miss Martha Anderton of Birmingham, Ala., in Evanston, Ill., August 12.

BEN THOMAS GALBRAITH, Henderson, Tenn., to Miss Mai Catherine Herron of Trenton, August 15.

ROBERT B. COFIELD, Cincinnati, to Miss Clara Hofferberth of Dayton, Ohio, recently.

Deaths

Frederick Clark Holden ✠ New York; University of the City of New York Medical Department, New York, 1892; professor emeritus of obstetrics and gynecology at the New York University College of Medicine; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member and past president of the American Gynecological Society; member of the American Society for the Control of Cancer; fellow of the American College of Surgeons; obstetrician and gynecologist, French Hospital; consulting gynecologist, Harlem Hospital and the Bronx Maternity and Woman's Hospital; director of gynecology, Jersey City Medical Center, Jersey City, N. J.; consulting obstetrician, Methodist Hospital, Brooklyn, Mount Vernon Hospital, Mount Vernon, N. Y., and the Margaret Hague Maternity Hospital, Jersey City, N. J.; consulting obstetrician and gynecologist at the Bellevue Hospital, where he had been director of the gynecologic service for many years; in 1941 received the doctorate of public health from New York University; died in Prouts Neck, Maine, August 27, aged 75, of acute pulmonary edema.

Eben Homer Bennet ✠ Lubec, Maine; Jefferson Medical College of Philadelphia, 1875; an Affiliate Fellow of and in 1912-1913 delegate to the American Medical Association; past president of the Maine Medical Association and the Washington County Medical Society; acting assistant surgeon in the U. S. Public Health Service; school superintendent for fifty years; in 1894 one of the first public high schools to be established in Maine was opened in Lubec largely through his interest in public education; for many years physician to the Roosevelt family when it summered in Campobello, officiating at the birth of Franklin Jr. in 1914 and assisting with Franklin Sr. when he first became ill with poliomyelitis; in 1935, at the suggestion of Mrs. Roosevelt, awarded the golden emblem of the Beacon Circle of Honor, an honor paid by the Beacon School, Boston, to an individual "who is an outstanding example for youth"; in 1937 received the annual award of the Maine Medical Association for "outstanding service as a doctor"; died August 31, aged 96, of cerebral thrombosis.

LIEUT. WALTER E. BROWN (MC), U.S.N., 1913-1943

LIEUT. GILBERT C. CAMPBELL (MC), U.S.N., 1914-1943

Edwin Manson Neher ✠ Laguna Beach, Calif.; Rush Medical College, Chicago, 1906; member of the House of Delegates of the American Medical Association in 1922, 1924, 1926 and 1928; member, past president and vice president of the Utah State Medical Association; member and past president of the Western Ophthalmological Society; member of the American Academy of Ophthalmology and Otolaryngology, Pacific Coast Oto-Ophthalmological Society and the American Ophthalmological Society; fellow of the American College of Surgeons; specialist certified by the American Board of Ophthalmology; formerly ophthalmologist on the staff of St. Mark's Hospital, Salt Lake City, where he was also ophthalmologist for the Utah Fuel Company; died July 8, aged 69, of cerebral hemorrhage.

Thomas Harris Cherry ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1904; specialist certified by the American Board of Obstetrics and Gynecology, Inc., clinical professor of gynecology at the New York Post-Graduate Medical School, Columbia University; fellow of the American College of Surgeons and the New York Academy of Medicine; attending gynecologist at the New York Post-Graduate Hospital; consulting gynecologist, Suffolk County Sanatorium, Holtsville, Flushing Hospital and Dispensary, Flushing, and the All Souls Hospital, Morristown, N. J.; author of "Surgical and Medical Gynecologic Technic"; died in the Manhattan General Hospital August 30, aged 64, of coronary thrombosis.

Katherine Pritchard Hoyt, Wenham, Mass.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1887; died June 1, aged 79, of coronary thrombosis.

Charles Calvin Hubbard, Farmer, N. C.; Jefferson Medical College of Philadelphia, 1888; honorary member of the Medical Society of the State of North Carolina; member of the Randolph County Board of Health; died July 20, aged 76, of angina pectoris.

William Merritt Jones, Greensboro, N. C.; University of Maryland School of Medicine, Baltimore, 1903; honorary member of the Medical Society of the State of North Carolina; formerly a member of the state board of medical examiners; served as health officer of Guilford County; examining physician for the county draft board during World War I and II; medical director of the Jefferson Standard Life Insurance Company; died July 29, aged 63, of carcinoma of the lung.

Benjamin Baker Kelly, Purdy, Mo.; University of Tennessee Medical Department, Nashville, 1890; served during World War I; served as president of the school board; died

KILLED IN ACTION

Walter Earl Brown ✠ Lieutenant (MC), U. S. Navy, Wilson, N. C.; Duke University School of Medicine, Durham, 1938; served an internship at the Park View Hospital, Rocky Mount, and the Baker Sanatorium in Lumberton; commissioned a lieutenant (jg) in the medical corps of the United States Navy on Oct. 2, 1940 and later promoted to lieutenant; aged 30; was killed in action in the Pacific area; the presumptive date of death was Nov. 14, 1943, according to the Navy Department.

Gilbert Carmon Campbell ✠ Lieutenant (MC), U. S. Navy, McCracken, Kan.; Creighton University School of Medicine, Omaha, 1940; served an internship at the Creighton Memorial St. Joseph's Hospital, Omaha; commissioned a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on July 7, 1941; became a lieutenant (jg) in the medical corps of the regular U. S. Navy on March 26, 1942; promoted to lieutenant on June 15, 1942; aged 29; killed in action in the Pacific area; presumptive date of death Nov. 16, 1943, according to the Navy Department.

in the Barry County Hospital, Cassville, July 13, aged 74, of uremia and chronic myocarditis.

Pierre Ulric Laberge, Ambrose, N. D.; School of Medicine and Surgery of Montreal, Que., Canada, 1886; died July 4, aged 83, of cerebral hemorrhage.

Eldorus De Motte Lyon, Hastings-on-Hudson, N. Y.; University of the City of New York Medical Department, New York, 1877; formerly health officer of the village of Peekskill and the town of Cortland; at one time on the staff of the Peekskill Hospital, Peekskill; died August 11, aged 88.

Will Hale Malone, Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1912; served during World War I; for many years on the staff of the Veterans Administration Facility, where he died July 9, aged 53, of cerebral hemorrhage.

Harry Knox Mansfield, Philadelphia; Hahnemann Medical College and Hospital, Philadelphia, 1885; served on the staffs of the Hahnemann and St. Luke's hospitals; died in Philadelphia General Hospital July 22, aged 82, of hypertensive cardiovascular disease.

William Clawson Martin ✠ Detroit; Detroit College of Medicine, 1890; an Affiliate Fellow of the American Medical Association; member of the American Urological Association; emeritus professor of urology at his alma mater; formerly on the staff of the Children's Free Hospital; died in the Henry Ford Hospital August 21, aged 75, of carcinoma of the esophagus and hemorrhage.

Arnold B. McCarty, Owensboro, Ky.; Louisville Medical College, 1900; died in the Owensboro-Daviess County Hospital July 27, aged 67, of heart disease.

Fred Ephraim Miller, Grand Rapids, Mich.; Chicago College of Medicine and Surgery, 1910; served during World War I; formerly a member of the medical staff of the city public schools; served as medical examiner for the state boxing commission and had been on the Michigan committee for the 1932 Olympiad; at one time connected with the police department and the contagious disease bureau of the Chicago department of health; died in the Veterans Administration Facility, Hines, Ill., July 30, aged 56, of chronic pulmonary tuberculosis.

Marc Monroe Mouton, Lafayette, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1913; served during World War I; formerly lieutenant governor of Louisiana, coroner of the Lafayette Parish and health officer of the city of Lafayette; on the visiting staffs of the Lafayette Charity Hospital and the Lafayette Sanitarium; died August 21, aged 53, of pulmonary tuberculosis.

Willis Bent Morse ✠ Salem, Ore.; Willamette University Medical Department, Salem, 1891; fellow of the American College of Surgeons; for many years a member and at one time president of the state board of health; past president of the Oregon State Medical Society; chairman of the state medical advisory board during World War I; visiting surgeon, Salem Deaconess Hospital and the Salem General Hospital, where he died July 20, aged 78, of cerebrovascular accident.

George Earl Paullus Sr. ✠ Memphis, Tenn.; Barnes Medical College, St. Louis, 1908; served during World War I; on the staff of St. Joseph's Hospital, where he died July 29, aged 62, of chronic cholecystitis, acute pancreatitis, acute hepatitis and rupture of the retroperitoneal artery.

CAPT. JOHN P. KEEFE
M. C., A. U. S., 1916-1944

MAJOR LUCIUS G. MCLAUCHLIN
M. C., A. U. S., 1898-1944

CAPT. THOMAS J. ROBBINS
M. C., A. U. S., 1917-1944

KILLED IN ACTION

John Patrick Keefe, Detroit; Wayne University College of Medicine, Detroit, 1943; served an internship at the City of Detroit Receiving Hospital; commissioned a first lieutenant in the medical corps, Army of the United States, July 28, 1942; began active duty on July 15, 1943, attached to the 137th Ordnance Maintenance Battalion, Armored Division, Camp Chaffee, Ark.; later promoted to captain; died in France June 24, aged 28, as the result of wounds received in action on D day, June 6.

Lucius Gould McLauchlin ✠ Ashland, Pa.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1924; served an internship at the Montreal General Hospital, Montreal, Que., Canada, and the Ashland State Hospital, where he was a resident physician and a member of the board of governors; served in France during World War I; compensation surgeon for the Philadelphia and Reading Coal and Iron Company; commissioned a captain in the medical corps, Army of the United States, on Oct. 21, 1942; later promoted to major; died in the European area June 20, aged 45, of wounds received in action.

Thomas James Robbins, Heber Springs, Ark.; University of Arkansas School of Medicine, Little Rock, 1941; commissioned a first lieutenant in the medical corps, Army of the United States, on May 11, 1942; began active duty on July 1, 1942; later promoted to captain; died in the European area June 23, aged 26, of wounds received in action.

Bureau of Investigation

"GILJAN" TESTIMONIAL OUTLIVES WRITER

"Wonderful Medicine" Fails to Save Him

On one page of the Cleveland *News* for July 20, 1944 appeared the testimonial of Alexander Kellough for "Giljan," reproduced here (reduced), and his death notice.

In his testimonial Mr. Kellough said, in part, "Giljan is a wonderful medicine. Any person having trouble such as mine should lose no time in taking it." Perhaps Mr. Kellough did lose time; the results indicate that he might better have advised, "Any person having trouble such as mine should waste no time or money on Giljan."

BACKACHE TORTURED HIM; WEAK FROM LOSS OF SLEEP

Mr. Alexander Kellough of 2508 F. Morris Block Place, Cleveland, Was Also in Misery From Indigestion, Gas Pains—Recommends Giljan as "Wonderful Medicine."

Mr. Alexander Kellough

Mr. Kellough's statement should bring comfort to thousands of suffering men and women who have sought in vain for relief from the same torturing miseries which plagued this grateful Cleveland man. His testimony explains the amazement, even of druggists, at the wonderful relief which Giljan is giving to so many who have agonized for years from stomach, liver, kidney ailments, bodily aches and pains. Mr. Kellough says:

"Constipation Slowed Me Up"

"I had backache and back weakness so bad that often it was hard to get out of bed mornings. I lost much sleep. My stomach was sour, too, and gas pains were so terrific I didn't care to eat. Constipation slowed me up, too, and kept me miserable. I have now taken almost 3 bottles of Giljan and feel greatly improved. Back pains have disappeared and I sleep and eat much better. Giljan is a wonderful medicine. Any person having trouble such as mine should lose no time in taking it."

Made From Nature's Herbs

Giljan is an advanced medical compound containing juices from 18 health - giving herbs, roots, and barks. It is taken before meals and mixes with the food in one's stomach, thus helping to eliminate the poisons that foster stomach troubles and to permit the kidneys and liver to function properly. It usually acts within 10 minutes to stop gas pains, sourness, bloat and belching. Users say it will not gripe or nauseate you like ordinary liver medicines. It tends to make your liver more active and to clear away the old bile from your system. At the same time, Giljan helps relieve sluggish kidneys and backache, caused by poor elimination.

Giljan is recommended and sold by all Marshall Drug Stores. Help yourself to health. Start today by buying a bottle of Giljan. One bottle will convince you. Get the family size and save the price of a bottle. The Giljan Medicine Company, Keith Bldg., Cincinnati, O.

MARSHALL DRUG STORES

Mr. Kellough's testimonial.

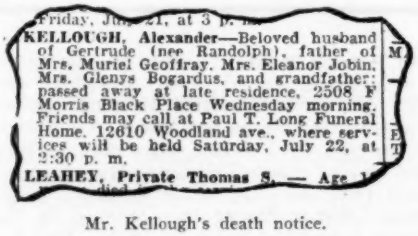
What is Giljan, which Mr. Kellough praised so fulsomely? What is the remedy which allegedly cleared up his backache, constipation, sour stomach and gas pains but failed to save his life? According to the carton front reproduced (in reduction) on this page, it is a "laxative herbal compound," though at least three of the ingredients listed—sodium benzoate, glycerin and saccharin—are hardly to be classified as herbal. Some of the other components named are outmoded in modern therapy, and altogether the combination of twenty declared substances recalls the old time "shot-gun" mixtures. Yet the carton declares it to be "compounded by Registered Pharmacists for Giljan Medicine Company, Cincinnati, Ohio."

That at least one government agency has objected to some of the Giljan publicity is seen in the complaint issued Sept. 16, 1944 by the Federal Trade Commission against the Giljan Medicine Company, Inc., its officers and their advertising agency on the charge that their newspaper and radio promotion contained false representations. Among these were that Giljan is a natural medicine and made from a new scientific formula, the ingredients of which substantially aid in giving health to the user; that the product is a cure for stomach trouble in its various forms, constipation, rheumatism, neuritis and liver and kidney ailments in general and also effective in relieving headaches and lack of energy; that it aids proper functioning of the kidneys and liver, clears old bile out of the system, strengthens the nerves, improves the appetite, relieves digestive disorders and has brought relief to 87 per cent of those who have used it. The complaint further charged that the preparation is an irritant laxative with no therapeutic value beyond that which a laxative offers, and that the advertisments are false for the further reason that they fail to reveal that Giljan is potentially dangerous when taken in the presence of abdominal pain, nausea or other symptoms of appendicitis.

Giljan
LAXATIVE
HERBAL
COMPOUND
ACTIVE INGREDIENTS: Cascara Bark, Senna Leaves, Aloes, Mandrake, Cayenne Pepper. ALSO CONTAINS: Barberry, Gentian, Wild Cherry Bark, Sarsaparilla, Burdock, Licorice, Poke Root, Juniper Berries, Sodium Benzoate, Glycerine, Saccharin, Methyl Salicylate, Oil Camphor, Sassafrassy Caramel.
Net Contents 8 Fl. Ounces
PRICE $1.35
COMPOUNDED BY REGISTERED PHARMACISTS FOR
GILJAN MEDICINE COMPANY
CINCINNATI, OHIO

Carton front of Giljan.

Here a glance at the Giljan concern's antecedents is worth while, since they have some bearing on this latest endeavor of one Gilbert H. Mosby in the nostrum field. On May 26, 1942, according to official records, he and two others incorporated the Mosby Medicine Company in Ohio, and on June 5, 1943 the name was changed to Giljan Medicine Company, Inc. The incorporators were reported as Gilbert H. Mosby, Samuel Sthulbarg and Benjamin S. Schwartz, the latter designated also as the statutory agent.



Friday, June 21, at 3 p. m.
KELLOUGH, Alexander—Beloved husband of Gertrude (nee Randolph), father of Mrs. Muriel Geoffray, Mrs. Eleanor Jobin, Mrs. Glenys Bogardus, and grandfather; passed away at late residence, 2508 F Morris Block Place Wednesday morning. Friends may call at Paul T. Long Funeral Home, 12610 Woodland ave., where services will be held Saturday, July 22, at 2:30 p. m.
LEAHEY, Private Thomas S. — Age

Mr. Kellough's death notice.

When the Mosby concern was incorporated, Mosby himself was said to be "broke" and to have been backed financially by Sthulbarg and a George B. Remus. It was further reported that Mosby called himself general manager of the company but refused to divulge the name of the president, who apparently turned out to be a Henry S. Dunlap. It appears that the "Gil"

in the title "Giljan" was taken from Mosby's first name (Gilbert) and the "Jan" for Janice, said to have been the first name of one of his succession of wives. Further, it appears that Mosby was ousted by his partners some time in 1943 and died in June 1944 from the effects of a fall in the street.

But Mosby's record in the "patent medicine" field far antedated Giljan. Around 1927 he began to tell the world about the wonderful benefits to be gained by taking his "Konjola," advertised as the "surprising new medical preparation." It was claimed to contain no fewer than thirty-two ingredients, thus putting to shame the later Giljan, with its mere twenty, some of which were in Konjola. The advertising of Konjola abounded in testimonials, and one, published in the Meadville (Pa.) *Tribune-Republican* on Aug. 20, 1929 and enhanced by the Konjola concern's boast "Another victory for Konjola in a seemingly hopeless case after all the others failed," came from a man who had died three weeks before the testimonial appeared!

When Konjola had about run its course, Mosby appears to have shelved it for another nostrum, "Indo-Vin," which likewise was represented to be a mixture of thirty-two ingredients —perhaps the same thirty-two which comprised Konjola. Indo-Vin, however, seems to have been short lived, and ere long Mosby was introducing "Van-Tage," another "tonic." This time he was in the Far West and advertising "At Hollywood, capital of the motion picture world, Van-Tage is a sensation. This medicine is made there. The Immense Van-Tage Laboratories are located at Hollywood. So the stars of the screen are intimately acquainted with this Great Compound." These claims appeared in an advertisement which featured the testimonial of the stage and screen comedian Robert Woolsey. But within two years Woolsey died and his testimonial lost its kick. Another pæan of praise for Van-Tage came from a Tom Nick and was featured in an advertisement in the Butte (Mont.) *Standard* Nov. 25, 1936, four days after another Butte paper had published an account of his funeral!

Thus the sordid procession passes in review—Konjola, Indo-Vin, Van-Tage, Giljan. Doubtless the sequence would have added a few new names had Mosby survived—and a few more death notices appearing with or prior to the corresponding testimonials. Funny, isn't it? But the reality is tragic!

STIPULATIONS

Agreements Between Federal Trade Commission and Promoters of Various Products

Following are abstracts of stipulations in which promoters of "patent medicines," medical devices and cosmetics have agreed, following action by the Federal Trade Commission, to discontinue certain misrepresentations in their advertising. These stipulations differ from the "Cease and Desist Orders" of the Commission in that such orders definitely direct the discontinuance of misrepresentations. The abstracts that follow are presented primarily to illustrate the effects of the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act on the promotion of such products:

Bel-Din.—This is a product of the Montrose Sales Company, Inc., trading as Montrose Products Company, Montrose, Calif. In January 1944 the concern and Guenther Bradford & Company, Chicago, an advertising agency, stipulated with the Federal Trade Commission to cease representing that the product will have any effect on the symptoms of asthma unless cardiac asthma is specifically excluded, or that it will relieve the symptoms of bronchial asthma beyond easing the difficulty in coughing and breathing. Also to be discontinued was any advertisement which did not reveal that the preparation is potentially harmful and should not be used by those having tuberculosis or goiter; provided, however, that such advertisement need contain only the statement, "Caution: Use Only as Directed" when the same warning appears in the labeling.

Benaris.—G. Bernardi of Cleveland, who puts out this product, stipulated with the Federal Trade Commission in January 1944 that he would discontinue any advertisement which did not clearly reveal that the too frequent or continued use of Benaris may cause nervousness, restlessness or sleeplessness; that its excessive use may cause injury to the lungs; that persons suffering from high blood pressure, heart disease, diabetes or thyroid trouble, or having a high fever should not use it except on the advice of a physician; also that without such advice the product should not be used when hoarseness or a cough has persisted for ten days. The stipulation provided, however, that such advertisement need only contain the statement, "Caution: Use Only as Directed" if the labeling directions bear a similar warning.

Bondease.—That this product will stop ringworm and athlete's foot or relieve swollen feet, itching or burning skin or tired or sore feet (unless limited to such conditions when due to fungus infection) are misrepresentations which the Bond Pharmacy Company, Little Rock, Ark., which puts out the product, agreed to discontinue in a stipulation that it entered into with the Federal Trade Commission in February 1944.

Diopreen.—This preparation for "promotion of personal hygiene" is put out by Roycemore Toiletries, Inc., trading as Shy Products Company, Chicago. In December 1943 the concern stipulated with the Federal Trade Commission that it would cease representing that Diopreen contains 7 grains of oxyquinoline sulfate per tablet or that the amount of this or any other ingredient of the preparation is in excess of that actually contained therein; that oxyquinoline sulfate is recognized by or described in the United States Pharmacopeia, or that the company manufactures any preparation or article of merchandise unless it owns and operates or directly controls the plant in which the products it sells are made.

Godefroy's Larieuse Hair Coloring.—That this product "ends gray hair," "puts an end to dingy, off-color hair" or will correct "dull, gray-streaked hair" were claims which the Godefroy Manufacturing Company of St. Louis agreed to discontinue in a stipulation that it entered into with the Federal Trade Commission in January 1944. The stipulation recognized that such claims would tend to give the impression that the product will do more than dye the exposed hair to which it is applied, or that its use will cause the hair shaft, as it grows from the scalp, to be similar in color, type or condition to that part of the shaft to which the product has been applied.

Gotu Kola.—A stipulation regarding this was entered into in January 1944 with the Federal Trade Commission by George W. Moody of Pensacola, Fla. In this Moody agreed to cease representing that this herbal product has therapeutic properties in excess of what it actually possesses, or that the medical profession generally has knowledge of and uses or praises it; that it will increase the vitality of a person 70 or 80 years old to that of a 40-year-old individual; that it will bring about perpetual youth, exercise an energizing effect on the brain cells, revitalize worn-out bodies, prevent nervous breakdown or be an effective treatment for mental troubles, blood pressure, rheumatism, elephantiasis, bruises, fever, ulcers, leprosy, skin diseases, jaundice, neuritis or heart trouble, increase the span of human life or "pep up" the glands.

Granaya with Cascara.—This is a product of E. R. Squibb & Sons, New York, who in January 1944 stipulated with the Federal Trade Commission that they would discontinue any advertisement which did not reveal that the product should not be used when abdominal pain, nausea or other symptoms of appendicitis are present; provided, however, that the advertisement need only contain the statement, "Caution: Use Only as Directed" when the labeling instructions for use carry a warning to the same effect.

HQZ Hair and Scalp Oil, HQZ Shampoo, and HQZ Lustre.—These products were the subjects of a stipulation entered into with the Federal Trade Commission in January 1944 by HQZ Laboratories, Inc., and Rufus Rhoades and Robert Davis, trading as Rufus Rhoades & Company and Rhoades & Davis, advertising agency, all of San Francisco. In the stipulation the respondents agreed to cease representing that the Hair and Scalp Oil penetrates into the scalp pores or hair follicles, loosens dirt, grease and dandruff imbedded there, and opens clogged pores; that the Hair and Scalp Oil and the Shampoo, used singly or in combination, will rejuvenate the hair, bring to the surface any grease or other foreign substance lodged in the scalp pores, solve the dandruff or other "hair trouble" problems, prevent dandruff or falling hair, or impart any therapeutic benefit to the hair or scalp; that the presence of alcohol, alkaline soap or heavy oil in competitive products causes them to be harmful, or that HQZ Laboratories, Inc., owns, operates or controls a laboratory.

Laxatrate.—In March 1944 E. A. "Billy" Hamburg, trading as Vegetrates Company, Los Angeles, stipulated with the Federal Trade Commission that he would discontinue any advertisements of this product which did not reveal that it should not be used when abdominal pains, nausea or other symptoms of appendicitis are present. The stipulation, however, permitted the statement in the advertisement, "Caution: Use Only as Directed," if the directions on the label should contain a warning to the same effect.

Milky Wayve Permanent Wave Solution.—This product is put out by Edwin K. Latz, Israel A. Latz and Sidney Seligman, trading as Seligman & Latz, New York City. A stipulation which they entered into with the Federal Trade Commission in January 1944 provided that they would cease representing that their product nourishes the hair and cannot injure it, and that the method of applying it is new or revolutionary. Further, they agreed to discontinue using the word "certified," which would give the impression that the product has been endorsed as to quality or fitness by any governmental, scientific or other recognized agency, or the words "Milky Wayve" or "milky bath" as part of the designation of the product, or representing through the use of picturizations or otherwise that the preparation is milk or contains milk.

Shasta Armenian Culture.—That this is nature's own balanced food, a life-prolonging item of diet, has destructive action on putrefactive bacteria in the intestinal tract and will rebuild the blood, nerves and glands were representations which S. Leila Hoover, Redwood City, Calif., agreed to discontinue in a stipulation that she entered into with the Federal Trade Commission in March 1944.

Correspondence

"MOBILE X-RAY UNITS IN INVASION"

To the Editor:—In THE JOURNAL, July 8, there appears on page 711, under the heading "Mobile X-Ray Units for Invasion," the following statement: "Hospitals in the field are unable to carry enough x-ray equipment to handle peak loads of patients. . . ."

I commanded an evacuation hospital in Italy throughout the Salerno-Cassino phase of the campaign. While in the combat zone, supporting the Fifth Army offensive closely, we had several peak loads of casualties during December 1943 and January 1944. On one occasion over 200 patients were admitted daily on three successive days.

Rain, gumbo mud, cold and litter carry in blackout were incidental problems encountered in this hospital, functioning entirely under tentage in the field. Thanks to the excellent prior planning, departmental organization and previous improvisation of equipment by Capt. Alfred A. J. Den, M. C., chief of the x-ray department, this department not alone kept abreast with the shock tents but was at all times one to one and a half hours ahead of the surgery for cases requiring operation.

At least one hospital in the field, therefore, was able to carry enough x-ray equipment to handle peak loads. It is not my purpose to belittle the work of Colonel Allen or the mobile x-ray units he has planned but to show that, by anticipating a possible situation and organizing to meet it, a hospital in the field can efficiently carry out its mission even during peak loads in the x-ray department.

JOHN W. MCKOAN JR., Colonel, M. C., A. U. S.

DIRECTORY OF MEDICAL SPECIALISTS

To the Editor:—The biographic data of the first two editions of the Directory of Medical Specialists include only positions (internships, residencies or assistantships) held during the course of training of men up to the time of their certification by the American boards, and hospital and medical school staff positions then currently held.

It is desired to extend these data in the third edition to include all formal hospital and medical school appointments, with dates held, even though now resigned, as well as records of all military service including commissions and dates, either in World War I, peacetime in the Reserve forces or in the present war.

Thus a chronologically complete sketch of a certified specialist's entire career is to be included in this third edition of the directory.

Membership or fellowship in national or sectional (not local) special societies and national general societies with offices held, and dates in any of these, should be reported.

Membership in recognized international medical societies may be included, but honorary or other membership in foreign medical societies should not be reported.

Reference to the second edition (1942) of the directory may be made for lists of medical societies to be included in one's biographic sketch.

Families or secretaries of men absent in military service are asked to complete or correct previous listings or new forms now being mailed to those eligible for inclusion in the directory. Only those certified by an official American board can be included, and there is no charge for this listing.

Communications should be addressed to the Directory of Medical Specialists, 919 North Michigan Avenue, Chicago 11, Illinois.

PAUL TITUS, M.D.
Editor, Directory of Medical Specialists.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and of Examining Boards in Specialties were published in THE JOURNAL, Sept. 30, page 318.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, Oct. 24-26. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ARKANSAS: * Little Rock, Nov. 9-10. Sec., Dr. D. L. Owens, Harrison.

CALIFORNIA: *Written.* Sacramento, Oct. 17-19. *Oral.* San Francisco, Nov. 15. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

CONNECTICUT: * *Medical. Written.* Hartford, Nov. 14-15. *Endorsement.* Hartford, Nov. 28. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, Nov. 14-15. Sec., Dr. J. H. Evans, Hartford 6.

DELAWARE: Dover, Oct. 10-12. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * Washington, November. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: * Jacksonville, Nov. 20-21. Sec., Dr. Harold D. Van Schaick, 2736 S.W. Seventh Ave., Miami 36.

IDAHO: Boise, Jan. 8-11. Dir., Bureau of Occupational Licenses, Mrs. Lela D. Painter, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Oct. 10-12. Supt. of Registration, Department of Registration and Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, Jan. 3-5. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 301 State House, Indianapolis 4.

KANSAS: Nov. 2-3 Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

MAINE: Portland, Nov. 14-15. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Homeopathic.* Baltimore, Dec. 1-3. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 14-17. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MINNESOTA: * Minneapolis, Oct. 17-19. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: Jackson, Oct. 16-17. Asst. Sec., Dr. R. N. Whitfield, Jackson.

NEVADA: Carson City, Nov. 6. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: Trenton, Oct. 17-18. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, Oct. 9-10. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, Oct. 16-19. Sec. Dr. R. R. Hannon, Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 2-5. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OREGON: Portland, Oct. 20-21. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland 4.

SOUTH DAKOTA: * Pierre, Jan. 16-17. Sec., Medical Licensure, State Board of Health, Dr. G. Cottam, Pierre.

TEXAS: Dallas, Nov. 15-17 and Dec. 19-21. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: New Haven, Oct. 14. Address State Board of Healing Arts, 250 Church Street, New Haven 10.

DISTRICT OF COLUMBIA: Washington, Oct. 23-24. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: Gainesville, Nov. 4. Final date for filing application is Oct. 20. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, Oct. 10. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, Oct. 13-14. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEW MEXICO: Santa Fe, Feb. 12. Sec., Miss Marion M. Rhea, State Capitol, Santa Fe.

OREGON: Portland, Nov. 4. Sec., Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Nov. 15. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Aberdeen, Dec. 1-2. Sec., Dr. G. M. Evans, Yankton.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Gonorrheal Infection in Eyes Weakened by Industrial Injury Compensable.—In the course of his employment on April 30, 1942 some fluid used for a wood preservative splashed up into Graham's face and eyes. He was treated immediately at a first aid station maintained by his employer and again the next day by an "eye specialist," who discharged him May 3 as "being able to work." Two days later Graham returned to the physician and his right eye was found to be infected with gonorrheal germs. It is undisputed that Graham did not have any venereal disease and that the infection came from some source other than the workman. The infection spread to the left eye on May 8. As a result of the infection Graham eventually lost the sight of his left eye. He instituted proceedings under the workmen's compensation act of Arkansas and was awarded compensation by the workmen's compensation commission, which, among other things, found that

> "It is recognized that gonorrheal infection, unless checked, will produce blindness" and "it is reasonable to assume that the infection found a ready portal of entry in the already inflamed and irritated eye of this claimant. In the opinion of the commission, the chain of causation has been established by this claimant, the liquid which was being used in his employment produced the irritation that offered a ready harbor for the gonorrheal infection that spread to the left eye and produced the blindness in the claimant's left eye."

The employer and his insurance carrier appealed to the circuit court, Phillips County, Ark., which affirmed the award of compensation. An appeal to the Supreme Court of Arkansas followed.

The employer and his insurance carrier contended that the award in favor of the workman should be reversed for two reasons: (1) It is speculation and conjecture for the commission to say that the irritated condition of the eyes, due to the industrial accident, made them more susceptible to the infection, and that blindness would not have occurred except for the irritation; and (2) even assuming the commission was justified in so finding, the germ infection was an intervening efficient cause, for which the employer would not be liable. With respect to the contention that it was speculation and conjecture for the commission to hold that except for the irritated condition of the eyes blindness would not have occurred, the court pointed out that while no witness testified that the irritation to the eyes made them more susceptible to gonorrheal infection it thought the commission had the right in the exercise of sound judgment and discretion to make the finding in this regard that it did make. It seems to us, said the court, a reasonable assumption that an inflamed and irritated eye, a conjunctivitis, would be a ready portal of entry for the germ that did attack the workman, or some other germ that he might have acquired. To support their contention that the germ infection which caused the blindness in the left eye was an intervening efficient cause which excused them from liability under the workmen's compensation act, the employer and his insurance carrier cited a number of cases, including *Bunge Bros. Coal Co.* v. *Industrial Commission*, 306 Ill. 582, 138 N. E. 189, to the effect "that an employee can only recover for a disability that is caused entirely by the accident which he received in his employment and that the employer is not responsible for any part of the disability that has been occasioned by another independent agency that has intervened after the accident occurred." In the Bunge case, said the court, the claimant was injured on March 8, 1920 in a collision between a coal wagon he was driving and a street car. On the following July 15 his physician found him infected with acute gonorrhea of recent origin and on August 12 found the workman suffering with acute gonorrheal arthritis. In this connection the Illinois court said:

> The proof is also to the effect that he (claimant) has suffered greatly from gonorrheal arthritis, and that the inflammation and swelling of the joints was occasioned by a new and independent cause, which occurred weeks after he received his injury.

So, continued the Supreme Court of Arkansas, it will be seen that the intervening efficient cause in the Illinois case occurred more than five months after the original compensable injury and had no connection with it. It was on these facts that the Supreme Court of Illinois used the language quoted. In a recent case decided by this court, *Garrison Furniture Co.* v. *Butler*, 177 S. W. 2d 738, Butler received superficial wounds on his hands while at work on April 16-17, 1942. On April 20 he consulted a physician and was sent to a hospital on April 21, where he died April 29 from lockjaw as a result of tetanus infection which entered the blood stream through the so-called superficial wounds. This court affirmed an award of compensation. It seems to have been assumed by counsel and the court in that case that if the tetanus bacilli gained entrance into the blood stream through the wounds on Butler's hands and caused his death and that if the wounds were received by him in the course of employment, compensation was properly awarded. The question there was: Did Butler receive his wounds to his hands from an accident injury arising out of and in the course of his employment? There was no question as to an intervening efficient cause. The injuries to Butler's hands were slight and superficial, but they formed a ready portal of entry for the tetanus bacilli, just as the inflamed and irritated eyes of Graham rendered them more susceptible to the entry of the gonorrheal germ.

The court, believing that the commission was justified in finding that there was a causal connection between the original injury and the resulting blindness in the left eye and that compensation was properly awarded, accordingly affirmed the judgment in favor of the workman.—*Pekin Wood Products Co. v. Graham, 181 S. W. (2d) 811 (Ark., 1944).*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 8-12. Dr. W. L. Benedict, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Academy of Pediatrics, St. Louis, Nov. 9-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

Annual Conference of State Secretaries and Editors, Chicago, Nov. 17-18. Dr. Olin West, 535 N. Dearborn St., Chicago, Secretary.

Association of American Medical Colleges, Detroit, Oct. 23-25. Dr. Fred C. Zapffe, 5 S. Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, New York, Nov. 2-4, Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

Inter-State Postgraduate Medical Association of North America, Chicago, Oct. 17-20. Dr. Arthur G. Sullivan, 16 N. Carroll St., Madison, Wis., Managing Director.

Midwestern Section of American Federation for Clinical Research, Chicago, Nov. 2. Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich., Secretary.

Oklahoma City Clinical Society, Oklahoma City, Oct. 23-26. Dr. L. C. McHenry, 512 Medical Arts Bldg., Oklahoma City, Secretary.

Omaha Mid-West Clinical Society, Omaha, Nebraska, Oct. 23-27. Dr. J. D. McCarthy, 1036 Medical Arts Bldg., Omaha 2, Secretary.

Southern Medical Association, St. Louis, Mo., Nov. 13-16. Mr. C. P. Loranz, Empire Building, Birmingham 3, Ala., Secretary.

Virginia, Medical Society of, Richmond, Oct. 23-25. Miss Agnes V. Edwards, 1200 E. Clay St., Richmond 19, Secretary.

Western Surgical Association, Chicago, Dec. 1-2. Dr. Arthur R. Metz, 250 East Superior St., Chicago, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

208:1-140 (July) 1944

Preventive Medicine in Britain. A. S. MacNalty.—p. 1.
Capillary Permeability in Myxedema. K. Lange.—p. 5.
Factors Influencing Return of Tolerance for Glucose in Middle Aged Obese Diabetics. M. B. Handelsman, with technical assistance of D. Schultz.—p. 15.
Relationship Between Hormonal Abnormalities and Accidents of Late Pregnancy in Diabetic Women. O. W. Smith, G. V. S. Smith and D. Hurwitz.—p. 25.
Diabetes Mellitus Associated with Albright's Syndrome (Osteitis Fibrosa Disseminata, Areas of Skin Pigmentation and Endocrine Dysfunction with Precocious Puberty in Females): Report of Case. F. B. Peck and C. V. Sage.—p. 35.
Note on Irradiation Sickness. W. B. Bean, T. D. Spies and R. W. Vilter.—p. 46.
New Practical Method for Subcutaneous Administration of Heparin: Preliminary Report. L. Loewe and P. Rosenblatt.—p. 54.
Meningococcus Infections with Articular Complications. M. J. Fox and J. Gilbert.—p. 63.
*Primary and Symptomatic Amyotrophic Lateral Sclerosis: Clinical Study of 81 Cases. I. S. Wechsler, M. R. Sapirstein and A. Stein.—p. 70.
*Electrocardiographic Changes Following Artificial Hyperpyrexia. A. H. Clagett Jr.—p. 81.
*Concentrated Red Cell Transfusions. M. L. Binder and A. Klein.—p. 95.

Amyotrophic Lateral Sclerosis.—Wechsler and his associates studied 81 patients with amyotrophic lateral sclerosis personally observed between 1939 and 1942. Of this group they designate 68 as primary; the rest, although also fairly typical clinically, are regarded as symptomatic. They rigidly excluded cases of progressive spinal muscular atrophy and lateral sclerosis. They arrived at the conclusion that amyotrophic lateral sclerosis is not one disease entity dependent on one etiologic factor but a syndrome of varying etiology. The largest group consists of so-called degenerative cases, some of which may possibly be the result of selective deficiency. Smaller groups may be the result of inflammatory processes or vascular changes. An even smaller group may possibly be toxic in nature. Amyotrophic lateral sclerosis, progressive muscular atrophy and uncomplicated lateral sclerosis are three different entities. The first is comparatively rapidly progressive and invariably fatal; the other two are chronic and last many years. While the intensity and extent of fibrillations often reflect the gravity of the disease, there is no constant parallelism between them and one cannot prognosticate on the basis of fibrillations alone. In many cases pseudobulbar manifestations may signalize the onset of amyotrophic lateral sclerosis. These studies confirm the want of parallelism between presence of active deep reflexes, absence of abdominal reflexes and a Babinski sign, despite involvement of the pyramidal tracts. The first always is present, the second two may or may not be.

Electrocardiographic Changes Following Artificial Hyperpyrexia.—Clagett describes electrocardiographic studies in 86 patients who received 118 sessions of fever. Electrocardiograms were taken routinely on all patients before and after fever therapy. Tracings also were taken following conditioning fevers, since these offered an opportunity to study the effect of fevers differing in duration and intensity. Of 80 tracings taken following therapeutic fever, 64 showed insignificant changes, 7 showed significant changes and 9 showed no change whatever from the prefever tracing. The results of previous workers who claimed that the ST segment was almost always depressed following fever were not confirmed. It was found that there was a slight increase or decrease in the amplitude of the P waves and the QRS complexes and that the ST segment was depressed in a few cases. The most constant change observed was an increase in the value of Bazett's K, an index of the duration of electrical systole. The authors discuss the effects of jaundice, acid-base balance and cardiac rate on the postfever electrocardiograms. Three cases with myocardial damage following fever therapy are presented. In 2 of these 3 almost complete recovery had apparently occurred when a relapse occurred in each, thirty-nine and fifty-six days respectively after fever. In cases of myocardial damage due to fever a good prognosis should not be given merely because the patient is young and the causative agent (fever) has been removed. The treatment of these cases should be the same as that given myocardial infarction due to any other cause. The authors also present 6 cases that showed transient and significant electrocardiographic changes following fever. They consider it highly probable that these transient changes were not on the basis of myocardial damage but rather due to temporary myocardial anoxia, possibly of a relative nature due to the tachycardia.

Concentrated Red Cell Transfusions.—Concentrated red cell preparations used by Binder and Klein were obtained from regular hospital donors. The Fenwal apparatus, a semiclosed system, was used to collect 500 cc. of blood in 50 cc. of 5 per cent sodium citrate solution. The blood was typed by the open slide microscopic method and then stored at 4 to 6 C. The blood selected was from 2 to 7 days old. Before preparation the donor's blood was cross matched with that of the recipient. The plasma was aspirated off under sterile precautions into a pooling flask; the pipet was then inserted to the bottom of the bottle and the red cells were aspirated into a different bottle. The cells obtained from one donor blood in this way were called one donor unit of concentrated red cells. The concentrated red cells were either used immediately or returned to the refrigerator. The concentrated red cells were never kept longer than two days after preparation. They were administered in regular Upjohn recipient sets. The authors did not find it necessary to dilute the concentrated red cells in order to maintain the flow. The regular transfusion procedure was varied only by elevating the blood reservoir about 3 feet higher than usual to obtain a greater pressure. Thirty minutes was the average time required to administer each donor unit. Experience with 124 transfusions demonstrated that they are as efficacious as whole blood in raising the hemoglobin of anemic patients in whom only the cellular elements of the blood are deficient. The same amount of hemoglobin can be supplied in a smaller volume of transfused fluid. Concentrated red cells are of definite value in relieving anemia of patients with a reduced cardiac reserve, by reducing the chances of the production of cardiac failure and pulmonary edema. Theoretically it would also be of value to use concentrated red cells for patients who have recently bled and in whom there is danger of dislodging a newly formed clot by increasing too greatly the volume of circulating fluid with quantities of whole blood. Concentrated red cell transfusions have their limitations. They should not be used for acute blood loss until the blood volume has returned to normal and the only deficit is in hemoglobin. Their use is contraindicated in shock, burns and when the plasma proteins are below normal. The use of concentrated red cells is not limited to elevating the hemoglobin level. Evans reported that they are efficacious in controlling bleeding and other purpuric manifestations of blood dyscrasias. The authors have observed the same beneficial results in a case of monocytic leukemia.

American Journal of Ophthalmology, Cincinnati

27:687-802 (July) 1944

Ptosis—Post-Traumatic and Hysterical. E. B. Spaeth.—p. 687.
Exophthalmos of Hyperthyroidism: Differentiation in Mechanism, Pathology, Symptomatology and Treatment of Two Varieties: Part II, J. H. Mulvany.—p. 693.
Etiology and Treatment of Tobacco-Alcohol Amblyopia: Part I. F. D. Carroll.—p. 713.
I. Metastatic Carcinoma of Choroid: II. General Metastasis from Melanoma of Abdominal Wall, with Paresis of External Rectus Muscle: III. Rubeosis Iridis, with Melanoma of Choroid and Secondary Glaucoma. E. C. Ellett.—p. 726.
Surgical Control of Glaucoma in Negro. C. E. Iliff.—p. 731.
Report on Family with Ectopic Lenses. C. A. Clapp.—p. 738.
Simple Test for Binocular Fixation: Clinical Application Useful in Appraisal of Ocular Dominance, Amblyopia ex Anopsia, Minimal Strabismus and Malingering. S. R. Irvine.—p. 740.
Relationship Between Bacteriology of Conjunctiva and Nasal Mucosa: Especial Reference to Certain Extraocular Inflammatory Diseases. C. Berens and Edith L. Nilson.—p. 747

American Journal of Pathology, Ann Arbor, Mich.

20:665-822 (July) 1944

Calcification of Media of Human Aorta and Its Relation to Intimal Arteriosclerosis, Aging and Disease. H. T. Blumenthal, A. I. Lansing and P. A. Wheeler.—p. 665.
Cushing's Syndrome with Possible Pheochromocytoma: Report of Case. P. M. LeCompte.—p. 689.
Keratodermia Blennorrhagicum: Report of Case with Autopsy. J. L. Carr and M. Friedman.—p. 709.
Periarteritis Nodosa in Experimental Hypertensive Rats and Dogs. C. C. Smith, Pearl M. Zeek and J. McGuire.—p. 721.
Reactions of Blood and Organs of Dogs After Intravenous Injections of Solutions of Methyl Celluloses of Graded Molecular Weights. W. C. Hueper.—p. 737.
Spontaneous and Transplanted Reticulum Cell Sarcoma in Wistar Rats. E. J. Farris and E. H. Yeakel.—p. 773.
Nonsuppurative Nodular Panniculitis (Weber-Christian's Disease). D. M. Spain and J. M. Foley.—p. 783.
Multiple Primary Liposarcomas. L. V. Ackerman.—p. 789.
True Hermaphroditism: Report of Case with Mammary Carcinoma. J. D. Moriarty.—p. 799.
Effects of 3,4 Benzpyrene on Wound Repair in Skin of Mice. M. Silberberg and Ruth Silberberg.—p. 809.

American Journal of Public Health, New York

34:693-816 (July) 1944

International Vital Statistics of Future. F. E. Linder.—p. 693.
Army Field Water Supply Developments. H. H. Black.—p. 697.
Nutritive Value of Brined and Fermented Vegetables. I. D. Jones and J. L. Etchells.—p. 711.
Factors Affecting Germicidal Efficiency of Chlorine and Chloramine. G. R. Weber and M. Levine.—p. 719.
Housing Problems of Interest to Public Health Engineer. M. A. Pond.—p. 729.
Further Evaluation of EC Medium for Isolation of Coliform Bacteria and Escherichia coli. C. A. Perry and A. A. Hajna.—p. 735.
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Fly Borne Bacillary Dysentery Epidemic in Large Military Organization. D. M. Kuhns and T. G. Anderson.—p. 750.

Am. J. Syphilis, Gonorrhea and Ven. Dis., St. Louis

28:397-528 (July) 1944

Sulfonamide Resistant Gonorrhea. A. W. Frisch, with the technical assistance of R. B. Edwards, M. W. Edwards and Beatrice Behr.—p. 397.
*Treatment of Acute Gonorrhea in Army. G. Campbell and G. R. Carpenter.—p. 406.
*One Dose, One Day Treatment of Gonorrhea with Sulfathiazole. A. Jacoby and A. H. Ollswang.—p. 413.
Method Using Solid Medium in Delayed Gonococcal Culture Procedure. J. D. Porterfield and E. A. Nelson.—p. 417.
Use of Splenectomized and Nonsplenectomized Mice in Production of Experimental Syphilis in Rabbits. U. J. Wile and S. A. M. Johnson.—p. 422.
Biologic False Positive Spinal Fluid Wassermann Reactions Associated with Meningitis: Report of 8 Cases. V. Scott, F. W. Reynolds and C. F. Mohr.—p. 431.
Intensive Treatment of Early Syphilis with Mapharsen Combined with Artificial Fever: Preliminary Report. N. N. Epstein, R. B. Rees and H. D. Brainerd.—p. 443.
Primary Syphilis of Rectum and Gonorrhea of Anus in Male Homosexual Playing the Role of Female Prostitute. A. J. Jones and L. Janis.—p. 453.
Peripheral Vascular Syphilis of Lower Extremities. F. H. Grauer and H. L. Myers.—p. 458.
Effect of Fever on Distribution of Arsenic in Tissues of Rabbits Injected Intravenously with Mapharsen. H. E. Stokinger, F. L. Dorn, R. A. Boak and C. M. Carpenter.—p. 465.

Treatment of Acute Gonorrhea in Army.—Campbell and Carpenter state that in a ten month period 3,270 patients with acute gonorrhea were treated with sulfonamides at Fort Bragg, North Carolina. Following the institution of "duty status treatment" 1,170 cases were treated without hospitalization. The men on "duty status" continued their regular military duties and training while under treatment. Recovery of 79.1 per cent of the men occurred on a single five day course of sulfathiazole (20 Gm.) and an additional 12.5 per cent were rendered asymptomatic by a second similar course, giving a total recovery rate of 91.6 per cent. In the hospital treated cases there was a 10 per cent recurrence rate. "Duty status" treatment was highly successful and resulted in a great reduction of days lost from military duty and a large saving in hospital beds, as 93 per cent of these patients did not require hospitalization. No serious drug reaction was noted. Local treatment was infrequently used and, as a result, complications were rare. Larger doses of sulfonamides for hospitalized patients may effect a higher recovery rate.

One Day Treatment of Gonorrhea with Sulfathiazole.—Jacoby and Ollswang report observations on 69 men whose ages ranged from 17 to 27 years and in whom gonorrhea had existed from one to fourteen days prior to the institution of treatment. The treatment first tried was the administration of 2 Gm. of sulfathiazole four times a day; this was used for 2 patients. The first patient, through a misunderstanding, was given 4 Gm. four times a day. No ill effects were noted. The dosage was then modified so that 4 Gm. was administered twice a day; this was tried on 3 patients. As a further modification, the entire 8 Gm. was administered at one time; this was used for 62 patients. Each patient was examined every day thereafter for one week. A urine specimen was examined twenty-four hours after medication. A complete blood count was done before and twenty-four hours after medication. Blood concentration of sulfathiazole was determined twenty-four hours after medication. There was relative freedom from serious toxic reaction. Five patients had minor toxic reaction. None showed anemia, leukopenia or disturbance in the number of granulocytes. Smears and cultures became negative in 35 cases in twenty-four hours, in 9 cases in two days, in 10 cases in three days and in 3 cases in four days. The discharge persisted in 25 patients after the smears and cultures became negative. Fifty-seven of these 69 patients were cured. Positive smears and cultures persisted in 12 patients. These were placed on a routine therapy of 4 Gm. of sulfathiazole daily for five days. Four of these patients were cured, 5 others remained persistently positive, 1 was doubtful, and 1 failed to return.

Archives of Dermatology and Syphilology, Chicago

50:1-78 (July) 1944

*Penicillin Therapy of Impetigo Contagiosa and Allied Diseases: Use of Penicillium Inoculated Dressing. H. M. Johnson.—p. 1.
Recurrent Vesicular Eruptions Appearing During Administration of Penicillin. W. N. Graves, C. C. Carpenter and R. W. Unangst.—p. 6.
Sulfur in Dermatologic Preparations. J. G. Downing, L. M. Ohmart and M. J. Stoklosa.—p. 8.
Eczematous Contact Dermatitis Due to Mercurials: Report of Case of Reaction to 10 per Cent Ammoniated Mercury Ointment and Associated with Mercurial Poisoning. M. H. Samitz.—p. 10.
*Immunization Therapy of Warts. H. Biberstein.—p. 12.
Treatment of Psoriasis with Sarsaparilla Compound. T. S. Saunders.—p. 23.
Unusual Form of Occupational Dermatitis: Report of Outbreak in Plant Manufacturing Hydrochloric Acid. L. Schwartz.—p. 25.
Keratosis Follicularis Is Not Primarily a Follicular Disease. F. A. Ellis.—p. 27.
Syphilitic Hepatitis with Unusual Concomitant Manifestations: Report of 2 Cases. J. N. Edson.—p. 31.
Dermatitis from Lemon Grass Oil (Cymbopogon Citratus or Andropogon Citratus). H. V. Mendelsohn.—p. 34.
Furuncular Myiasis. O. G. Costa.——p. 36.
Triple Symptom Complex of Bechet: Report of Case. H. Ephraim.—p. 37.
*Dermatitis Due to Nail Polish: Study of 26 Cases with Chief Allergenic Component Toluene Sulfonamide Formaldehyde Resin and Related Substances. H. Keil and L. S. Van Dyck.—p. 39.

Penicillin for Impetigo Contagiosa.—Robinson and Wallace devised moist pencillium inoculated gauze pads to be used topically. Johnson describes his modification in the treatment of 25 patients with common pyodermas. Twelve patients with impetigo contagiosa were clinically clear of infection as early as three days and not later than seven days after the use of the penicillin-containing pads was begun. Four of the patients were previously treated with sulfonamides without improvement. Results for 2 patients with sycosis vulgaris showed promise that this method may become a new means of treating a stubborn recalcitrant infection. Ecthyma, streptococcic lymphangitis, a streptococcic infection of an ear and an abdominal cutaneous wound healed within eleven days. An ulcer of the leg due to Staphylococcus aureus of three months' duration had healed 90 per cent in six weeks after all methods of local therapeusis had been used. Production of crude penicillin presents many difficulties. Contamination of the pure culture of Penicillium notatum could render it useless and possibly dangerous. Penicillin pads and liquor should be tested for their potency by a ring test before they are used. Topical penicillin therapy will possibly supplant use of sulfonamide compounds or be a valuable adjunct. Absence of local reaction and sensitivity places the mold in a unique situation in comparison with the

sulfonamide compounds. A possible pitfall in the local use of penicillin is the suggested theory that one may become penicillin fast by repeated small applications. This hypothesis can be proved only by time and experience.

Immunization Therapy of Warts.—Biberstein describes an immunization therapy for warts which consists of injections of an extract of the lesions. First results of its use were published in 1924; since then reports have been published repeatedly, including also reports of successful treatment of warts in cattle and horses. He rejects the theory that the results obtained in the treatment of warts were due to suggestion. Many of the methods used may have one important point in common: they act by way of the vegetative nervous system. Results accomplished with injections of an extract of warts and of condylomata acuminata are due to immunizing factors. While this treatment can be used in any case of warts, it is indicated particularly in the presence of an excessive number of warts, in warts in locations in which other methods are impracticable or inadvisable (subungual region, nail wall and plantar region), in warts resistant to other methods of treatment and in recurrences following the administration of other treatments.

Dermatitis Due to Nail Polish.—Keil and Van Dyck report observations in 26 cases of nail polish dermatitis in which they were able to make patch tests with toluene sulfonamide resin and a number of related substances and derivatives. The data support Simon's view that toluene sulfonamide formaldehyde resin is the chief cause of nail polish dermatitis as seen today. The occurrence of so many cases is moreover consistent with the relatively recent introduction of this synthetic resin. In 25 of the 26 subjects, tests with toluene sulfonamide formaldehyde resin, which is not a primary irritant in the concentration used, elicited intensely positive reactions. Hypersensitiveness to this resin is frequently accompanied by group reactions to related chemical fractions and derivatives, such as the condensate of toluene sulfonamide and formaldehyde, toluene sulfonamide and, to a lesser extent, formaldehyde. This principle of group reactions seems also to extend to sulfanilamide. In 1 of 4 subjects with nail polish dermatitis a definite positive reaction was elicited with sulfanilamide; the patient had never used this or related compounds either internally or externally. Toluene sulfonamide formaldehyde resin was established by patch tests as present in one of the straw hat lacquers found on the market. This resin appears not to be present in the hair lacquers which have lately caused instances of contact dermatitis. A person hypersensitive to toluene sulfonamide formaldehyde resin is usually unable to tolerate the majority of nail polishes commonly used. A negative reaction to a patch test with this resin does not eliminate nail polish dermatitis due to another cause.

Archives of Internal Medicine, Chicago

73:433-504 (June) 1944

*Clinicopathologic Studies of Renal Damage Due to Sulfonamide Compounds: Report of 14 Cases. F. D. Murphy, J. F. Kuzma, T. Z. Polley and J. Grill.—p. 433.
Importance of Bronchography in Cases of Unresolved Pneumonia. G. S. Grier III.—p. 444.
*Infectious Mononucleosis: Study of 196 Cases. A. W. Contratto.—p. 449.
Spontaneous Pneumothorax Complicating Bronchial Asthma: Report of 2 Cases and Consideration of Possible Mechanisms Involved in Its Production. M. Trowbridge Jr.—p. 460.
Nutritional Problems Presented by Patient with Extensive Jejunoileitis. S. T. Killian and F. J. Ingelfinger.—p. 466.
Late Cerebral Sequelae of Rheumatic Fever. W. L. Bruetsch.—p. 472.
Diseases of Heart: Review of Significant Contributions Made During 1943. C. Williams, with editorial assistance of P. D. White.—p. 477.

Renal Damage Due to Sulfonamide Compounds.—Murphy and his co-workers report clinical and pathologic data for 14 patients in whom renal damage developed after therapy with sulfonamide compounds. Thirteen of the 14 patients died and were studied post mortem. Decapsulation of the kidney was done and a biopsy specimen taken of 1 patient who recovered. Most of the commonly used sulfonamide compounds were employed, but sulfathiazole was the most commonly used. The primary disease under treatment was considered to play no part or at any rate a small one in causing the renal damage. The quantity of the sulfonamide compound administered and the drug level in the blood appeared to be unimportant in producing the renal damage. As much as 41 Gm. and as little as 10 grains (0.6 Gm.) were responsible for fatal renal injury. In a few of the cases deposits of crystals of the drugs in the urinary tract causing some degree of mechanical obstruction were found associated with the nephrotoxic lesion; but this was not the rule, as in most of the cases reported the nephrotoxic lesion was independent of mechanical blocking. Microscopically there was simple tubular degeneration present in all the kidneys regardless of what other changes were present. Advanced tubular degeneration, necrosis of the tubular cells and intense inflammatory reaction outside the nephron in the surrounding tissues occurred in some cases. These various tubular lesions undoubtedly represent degrees in the severity of one process rather than different kinds of response. In 1 case advanced changes in the glomeruli were noted.

Infectious Mononucleosis.—According to Contratto a young adult with symptoms of cold, sore throat and grip should be suspected of having infectious mononucleosis and the necessary laboratory tests should be made. The author and his associates attended a large number of young men suffering from this disease. From 1935 to 1943 there were 12,601 men admitted to the Stillman Infirmary, of whom 249 had a discharge diagnosis of infectious mononucleosis. Of this number 53 were eliminated as not presenting a typical enough picture. Type and severity of symptomatology varied greatly. Sore throat was the most common symptom. Although it did not occur as the presenting symptom in more than 50 per cent of the cases, it developed at some time during the course of the illness in all except 18 per cent. Headache often heralded the onset of the disease. Fatigue and general malaise were frequent. Gastrointestinal symptoms were not prevalent, but anorexia was common. A presenting symptom of stiff or sore neck was usually referable to the swollen cervical lymph nodes. The onset of the lymphadenopathy was usually found in this area and often on the left side. The symptoms of ordinary infections of the upper respiratory tract with nasal congestion, fever and chills were conspicuous. The spleen was palpable in 91 cases. In several cases the spleen was definitely tender. The diagnosis of infectious mononucleosis cannot be made unless either the heterophile reaction of Paul and Bunnell is positive in high dilution or the blood smear is typical. The author stresses the importance of making frequent tests and smears during the course of the illness, since there is often a delay of days or even weeks before the hematologic changes are conclusive enough to permit an accurate diagnosis.

Bulletin of Johns Hopkins Hospital, Baltimore

74:275-320 (May) 1944

Immunization with Vole Acid Fast Bacillus Against Experimental Tuberculosis. W. S. Brooke and R. Day.—p. 275.
Favism. H. W. Josephs.—p. 295.
Experimental Studies on Sulfapyrazine in Mice. G. I. Trevett.—p. 299.
Observations on Diet Deficient in Both Methionine and Cystine in Man. A. A. Albanese, L. E. Holt Jr., J. E. Brumback Jr., Jane E. Frankston and Virginia Irby.—p. 308.

Bulletin New York Academy of Medicine, New York

20:319-360 (June) 1944

Indications for Psychoanalytic Therapy. F. G. Alexander.—p. 319.
Some Psychosomatic and Therapeutic Aspects of War Neuroses. P. H. Hoch.—p. 333.
Progress in Sulfonamide Prophylaxis of Acute Infectious Diseases. W. D. Sutliff.—p. 348.

20:361-426 (July) 1944

*Circulation in Traumatic Shock in Man: Harvey Lecture, Feb. 17, 1944. D. W. Richards Jr.—p. 363.
International Health: Hermann M. Biggs Memorial Lecture. W. A. Sawyer.—p. 394.

Circulation in Traumatic Shock in Man.—Richards describes a technic for measuring in man both the pressure of blood in the right auricle and the total volume flow of blood or cardiac output. These measurements are achieved by means of a long ureteral catheter introduced into a median basilic vein and thence passed along axillary and subclavian veins into the right auricle. The technic was originated by Forssmann with himself as subject more than ten years before. The technic

has been perfected and has proved to be remarkably easy, safe and painless, no serious untoward effects having been encountered in over 250 catheterizations. The research was pursued jointly by three groups: A group under Cournand was responsible for measurements of pulmonary ventilation and respiratory gas exchange, arterial and venous blood gas analyses and the catheterization technic; a group under Gregersen provided blood volume determination by the use of the dye T-1824; a group under Smith provided optical registration of arterial pressure tracings by the use of the Hamilton manometer. In a number of cases renal clearance studies were made by Smith's technic. The clinical material consisted of injured patients admitted to the Bellevue Hospital emergency service. All instances of shock were of the secondary, progressive form. While different injuries led to circulatory failure in different ways, the essential finding in all appeared to be an inadequate venous return of blood to the heart with diminished cardiac output. A deficit in circulating blood volume was responsible. Observations on the vascular bed in shock are summarized as follows: 1. In shock with blood loss there is a tendency to selective vasoconstriction, which is compensatory. 2. This compensation may fail, either gradually or suddenly. The patient in shock is in an unstable state, and the smallest additional trauma or disturbance may have disastrous effects. 3. Elevation of the feet in shock usually raises arterial blood pressure and is beneficial. 4. Drug therapy of shock is not satisfactory at present, but certain drug effects may prove to be helpful for peripheral circulatory failure. 5. Alcohol causes vasodilatation, which is unfavorable. 6. The most effective treatment is replacement of blood volume. When whole blood has been lost in large amounts, replacement by plasma alone will produce an acute anemia. The preference for whole blood in treating these types of injury has been increasingly emphasized in military casualties in this war. Restoration of blood volume brings the patient out of acute circulatory failure but is not complete treatment in itself. There is need for increased amounts of sodium salts and proteins. Fluids, salts and food should be started by mouth in the post-shock state as soon as tolerated. Oxygen therapy is frequently a necessity in chest injury and might be helpful in many cases of burns. The central circulation is better maintained if the volume of blood in the extremities is minimal, and in this sense cool extremities, particularly the avoidance of external heat applied to them, should be beneficial. This does not mean that the body as a whole should be subjected to cold. Exposure to cold affects shock most unfavorably.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

78:1-122 (July) 1944

Study of Parachute Injuries. C. D. Lord and J. W. Coutts.—p.57.
Complications of Meningococcic Infections: Analysis of 100 Cases. P. S. Strong and J. L. Hollander.—p. 68.
Diarrheal Diseases in U. S. Troops in Belgian Congo. C. D. Dunham and W. H. Gillespie.—p. 76.
Reconditioning Problem at Oliver General Hospital. S. E. Bilik.—p. 81.
Neuropsychiatrist and Convalescent Training Program of Army Air Forces. A. A. Rosner.—p. 93.
Sulfathiazole for Prevention of Gonorrhea. P. G. Reque and D. Bergsma.—p. 97.
Preparation of Culture Mediums in Field. M. Levine and A. H. Stock.—p. 103.
*Relation of Antisulfonamide Action of Serum to Resistance to Sulfonamide Therapy. D. A. Boroff.—p. 111.

Antisulfonamide Action of Serum and Resistance to Sulfonamide Therapy.—Boroff and his collaborators demonstrated that serums of certain individuals have an antisulfonamide action when tested in vitro. Boroff attempted to correlate this action with the resistance to sulfonamide therapy by certain patients with gonorrheal urethritis. A group of 18 patients with gonorrheal urethritis was selected. Thirteen of them had chronic gonorrhea and had received three or more courses of either sulfadiazine or sulfathiazole or both without apparent effect. The other 5 were patients with acute gonorrheal urethritis who showed no resistance to the drug and who were completely cured by one or two courses of sulfathiazole. From each of the selected patients 25 cc. of blood was taken under sterile conditions, and the serums were studied for antisulfonamide action. The results indicate that there may be a relationship between the in vitro manifestation of antisulfonamide action of the serums and the resistance to sulfonamide therapy. The fact that this antisulfonamide action may be measured in the laboratory presents a possibility of predicting the magnitude of the dose of drug necessary for chemotherapy to be effective. The success of the therapy may thus be prognosticated. Potentially resistant cases, instead of being subjected to prolonged and ineffective drug therapy, may be immediately determined in the laboratory and some other form of therapy applied.

Cancer Research, Baltimore

4:401-464 (July) 1944

Observations on Inhibition of Development of Spontaneous Leukemia in Mice by Underfeeding. J. A. Saxton Jr., M. C. Boon and J. Furth.—p. 401.
Incidence of Spontaneous Fibroadenoma in Albany Strain of Rats. Ethel Burack, M. V. Danzi, J. M. Wolfe and A. W. Wright.—p. 410.
Non-Heme Iron Content of Tissues of Mice of High Cancer and Low Cancer Strains. F. L. Warren and F. Goulden.—p. 417.
Hemoglobin Content of Blood of Mice of RIII and CBA Strains. F. Goulden and F. L. Warren.—p. 421.
Factors Affecting Carcinogenesis: II. Incorporation of 3,4-Benzpyrene in Media Containing Purified Lecithin or Cephalin. H. Weil-Malherbe and F. Dickens.—p. 425.
Spontaneous Tumors of Adrenal Cortex in Castrated Male Rat. J. Heiman.—p. 430.
Racial Distribution of Cancer: I. Epithelial Tumors of Skin, Lip and Breast. R. Schrek.—p. 433.
Clinical Effects of Aldehyde Bisulfites in Patients with Cancer: II. Administration of Heptylaldehyde Bisulfite to Patients with Lymphomas. H. O. Singher, J. C. Abels, L. F. Craver and C. P. Rhoads.—p. 444.
Studies on Tumors of Testis: I. Water and Electrolyte Content of Testicular Tumors and of Normal, Cryptorchid and Estrogenized Testis. C. Huggins and Lillian Eichelberger.—p. 447.

Delaware State Medical Journal, Wilmington

16:73-104 (June) 1944

Future Role of Mental Hygiene. M. A. Tarumianz.—p. 73.
Atypical Case of Involutional Psychosis. P. F. Elfeld.—p. 77.
Enuresis. B. G. Lawrence.—p. 80.
Atypical Neurological Syndromes in Alcoholic States, with Special Reference to Pyramidal Syndrome. G. J. Gordon.—p. 83.
Functional Psychosis in Old Age. M. B. Zimbler.—p. 88.
Hypothyroidism Simulating Functional Psychoses. G. S. Bieringer.—p. 93.
Conversion Hysteria in an Individual Suffering from Korsakoff Psychosis. F. A. Freyhan.—p. 95.

Endocrinology, Springfield, Ill.

35:1-72 (July) 1944

Influence of Hormones on Lymphoid Tissue Structure and Function: Role of Pituitary Adrenotropic Hormone in Regulation of Lymphocytes and Other Cellular Elements of Blood. T. F. Dougherty and A. White.—p. 1.
Metabolism of Steroid Hormones. R. I. Dorfman, B. N. Horwitt, R. A. Shipley and W. E. Abbott.—p. 15.
Experimental Hypothyroidism in Monkey. J. W. Jailer, W. M. Sperry, E. T. Engle and G. Smelser.—p. 27.
Influence of Diet on Cholesterol Concentration of Blood Serum in Normal, Spayed and Hypothyroid Monkeys. W. M. Sperry, J. W. Jailer and E. T. Engle.—p. 38.
Extraction of Cortin-like Substances from Human Postoperative Urine. Eleanor H. Venning, M. M. Hoffman and J. S. L. Browne.—p. 49.
Evidence for Early Testis Hormone Secretion in Rat from Study of Epididymis. E. S. Cieslak.—p. 63.

Illinois Medical Journal, Chicago

85:269-314 (June) 1944

Pulmonary Embolism: Study of Relation of Occlusion of Pulmonary Artery to Sudden Death. M. Joannides and A. L. Hesse.—p. 279.
Nervous and Mental Manifestations Observed in Spontaneous Hypoglycemia. A. A. Lieberman.—p. 287.
Surgical Complications of Pregnancy. W. G. Cummings and P. H. Smith.—p. 292.
Treatment of Benign Uterine Bleeding in Menopause. J. R. Willson.—p. 295.
Protecting Place of Employment. J. J. Bloomfield.—p. 299.

86:1-80 (July) 1944

Reversibility of Heart Disease. P. D. White.—p. 9.
Abdominal Tumors of Questionable Origin: Roentgenologic Aspects. A. Hartung.—p. 14.
Health Examination for School Children Required by Law. R. O. Duncan.—p. 17.
Further Observations on Lung Changes in Electric Arc Welders. O. A. Sander.—p. 72.

Journal of Aviation Medicine, St. Paul

15:149-212 (June) 1944

Comparative Testing of Aviation Oxygen. C. L. Gemmill.—p. 150.
Thyroid Function and Resistance to Anoxia in Rat. A. M. Hughes and E. B. Astwood.—p. 152.
Effect of Partial Hepatectomy on General Resistance and Blood Sugar Level in Rats Exposed to Anoxia. F. Gregoire, C. P. Leblond and E. Robillard.—p. 158.
Effects of Physical Activity and of Simulated Altitudes on Pulmonary Ventilation, Maximal Inspiratory (Peak) Flow and Pressure in Relation to Oxygen Requirements. F. G. Hall and J. W. Wilson.—p. 160.
*Experimental Study on Modifications of Urinary Secretion at High Altitude. J. Malmejac.—p. 167.
Analysis of Aviation Accidents. B. R. Bugelski.—p. 172.
Modern Trends in Teaching of Naval Aviation Medicine. B. Groesbeck Jr.—p. 182.
Review of Activities of the Royal Canadian Air Force Medical Service. F. A. L. Mathewson.—p. 186.
Army Air Force Altitude Training Program. H. S. Wigodsky.—p. 190.
Acute Poliomyelitis Case Transported by Air. V. E. Frazier.—p. 195.

Urinary Secretion at High Altitudes.—According to Malmejac urinary secretion decreases at high altitudes and elimination of nitrogenous wastes is momentarily upset. A series of experiments with dogs was undertaken at the Medical Schools of the Universities of Marseille and Algiers and at the Laboratory of Medicophysiologic Research of the French Air Force in Algiers to determine the causes which disturb urinary secretion at high altitudes. Studies were made on the effect of depression on urinary secretion, the role of the renal nervous system, the effects of the secretion of epinephrine, the influence of peripheral physical factors, eventually intervention of various chemical factors, the role of gas bubbles and the like. The observations revealed that barometric depression is followed by a progressive decrease in urinary secretion. This reduction begins to manifest itself at a depression corresponding to an altitude of 12,000 to 16,000 feet. Three major actions occur successively to produce the oliguresis: (*a*) Nervous action: This is the principal one and the first which can be observed. It brings on renal vasoconstriction, origin of the oliguresis which appears from 12,000 to 16,000 feet. (*b*) Humoral adrenal action: This appears after the nervous action, when the depression corresponds to an altitude of 24,000 feet. (*c*) Physical action: This is represented by gas bubbles, which are produced at great depressions corresponding to more than 30,000 feet. These three factors complement one another. They not only bring about a progressive reduction of the urinary secretion but also modify the composition of the urine. The oliguresis has as a corollary the diminution of chlorides, the elimination of which is greatly disturbed. The inhalation of oxygen prevents the effects of the nervous and humoral actions.

Journal of Immunology, Baltimore

48:335-410 (June) 1944

*Action of Penicillin on Staphylococcus in Vitro. L. A. Rantz and W. M. M. Kirby, with technical assistance of Elizabeth Randall. —p. 335.
Titration of Tetanal Toxins and Toxoids by Flocculation. P. J. Moloney and Joan N. Hennessy.—p. 345.
Agglutination of Antigens from Distemper Infected Dogs and Ferrets by Anticanine Distemper Immune Serums. A. J. Weil, F. Popken and J. Black.—p. 355.
Purification and Character of Swine Influenza Virus. A. R. Taylor, D. G. Sharp, I. W. McLean Jr., Dorothy Beard, J. W. Beard, J. H. Dingle and A. E. Feller.—p. 361.
Specific Precipitation: VI. Restricted System Bivalent Antigen, Bivalent Antibody as Example of Reversible Bifunctional Polymerization. A. D. Hershey—p. 381.

Action of Penicillin on Staphylococcus in Vitro.—In view of the usefulness of turbidimetric methods for the measurement of the rate of bacterial growth in the study of sulfonamide bacteriostasis, Rantz and Kirby decided that similar technics might be applied in the determination of the mode of action of penicillin. They used these methods in studying the effects of penicillin on various strains of staphylococci. They found that penicillin is actively bactericidal for the staphylococcus and that lysis of the organism occurs in the course of its action. This has not been demonstrated for the hemolytic streptococcus. Whether this dissolution of the organism is the result of the direct action of penicillin on the cell membrane or is caused by autolytic enzymes present in the bacterial cell that become active as the result of interference with vital bacterial metabolic processes by penicillin cannot now be determined. The latter hypothesis is, perhaps, the more probable since it is known that staphylococci will, under certain circumstances, undergo spontaneous lysis. In spite of the ease with which enormous numbers of staphylococci can be killed and lysed by small amounts of penicillin, many organisms remain alive even after prolonged exposure to this chemical. The remaining viable bacteria on retesting may be shown to be as sensitive to the action of penicillin as was the parent strain, so that their survival is not the result of artificially induced penicillin resistance. The presence in the blood and tissues of 0.1 to 0.2 unit of penicillin per cubic centimeter would, on the basis of the observations recorded in this report and those of Rammelkamp, in which staphylococci were exposed to the action of penicillin in whole blood and serum, seem to be adequate for the therapy of most clinical infections. It is generally stated that penicillin is not inhibited by serum, body fluids or peptones. The observations described here indicate that lysis occurs somewhat more slowly and that more organisms remain viable after prolonged exposure to penicillin if a rich broth is used rather than the relatively incomplete synthetic medium. When peptones were added to the synthetic medium in increasing concentration, the control organism multipled more rapidly but penicillin activity was unimpaired. This is in striking contrast to the action of the sulfonamides. It is possible that the constituents of the culture medium have no effect on the inhibitory phase of penicillin action on the staphylococcus but are concerned in the ease with which the agent may induce lysis and killing of the bacteria. The authors conclude that penicillin is an extraordinarily potent agent which in minute amounts induces the death and lysis of staphylococci. That this effect is not complete and that viable organisms remain after prolonged exposure to the drug is unfortunate and may explain certain clinical failures. There is a close correlation between the concentration of penicillin and its activity. By the methods described in this report a great natural variation in the sensitivity of strains of coagulase positive staphylococci to the action of penicillin may be demonstrated the clinical significance of which has not been evaluated.

Journal of Infectious Diseases, Chicago

74:173-256 (May-June) 1944

Substance in Animal Parasites Related to Human Isoagglutinogens. J. Oliver-González and Mercedes Vincente Torregrosa.—p. 173.
Defective Granular Eggshell Formation by Schistosoma Mansoni in Experimentally Infected Guinea Pigs on Vitamin C Deficient Diet. C. Krakower, W. A. Hoffman and J. H. Axtmayer.—p. 178.
Mosquito Transfer of Pigeon Strain of Plasmodium Relictum. W. B. Redmond.—p. 184.
In Vitro Effects of High Temperatures on Avian Malarial Parasites. F. E. Caldwell.—p. 189.
Feline Pneumonitis (Baker), New Member of Lymphogranuloma-Psittacosis Group of Agents. Dorothy Hamre and G. Rake—p. 206.
Survey of Chronic Meningococcus Carriers in Semipermanent Population. C. P. Miller, W. G. Beadenkopf, Dolores Peck and Mary Wright Robbins.—p. 212.
Ontogenetic Change in Antigenic Specificity of Organs of Chick. V. Burke, N. P. Sullivan, Helen Petersen and Ruth Weed.—p. 225.
Observations on Two Epidemics of Infective Hepatitis in Palestine Among Recent Immigrants. I. J. Kligler, D. S. Btesh and W. Koch. —p. 234.
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Journal-Lancet, Minneapolis

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Effect of Muscle Pain on Central Nervous System at Spinal and Cortical Levels. E. Gellhorn.—p. 242.

Journal of Neurophysiology, Springfield, Ill.

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Journal of Nutrition, Philadelphia

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*Vitamin Content of Variety Meats. J. M. McIntire, B. S. Schweigert, E. J. Herbst and C. A. Elvehjem.—p. 35.
*Protein Nutritional Value of Soybean, Peanut and Cottonseed Flours and Their Value as Supplements to Wheat Flour. D. B. Jones and J. P. Divine.—p. 41.
Utilization of Thiamine in Human Subject: Effect of High Intake of Carbohydrate or of Fat. J. G. Reinhold, J. T. L. Nicholson and K. O'Shea Elsom, with technical assistance of Charlotte Chornock. —p. 51.
Production of Vitamins in Germinated Peas, Soybeans and Other Beans. C. E. French, G. H. Berryman, J. T. Goorley, H. A. Harper, D. M. Harkness and E. J. Thacker.—p. 63

Vitamin Content of Variety Meats.—McIntire and his associates analyzed the thiamine, riboflavin and nicotinic acid content of samples of bologna, frankfurters, pork links, beef liver, veal heart, Canadian bacon, various types of sausage, head cheese, oxtail, lamb shank and other variety meats. They found that these meats are a good source of the aforementioned vitamins, containing about the same amounts as fresh muscle meats. Retention of these vitamins in some of the meats was studied during broiling, braising and boiling. Greater amounts of all the vitamins were retained in the meat after broiling than after braising. In the case of boiling the vitamin retention in the meat was dependent on the cooking time. Broiling favored a higher total retention of thiamine than did braising. In nearly every case over 90 per cent of the nicotinic acid and riboflavin was recovered in the meat and drippings.

Nutritional Value of Soybean, Peanut and Cottonseed Flours.—Jones and Divine studied the growth promoting values of the proteins of soybean, peanut and cottonseed flours by the rat growth method and also their values as supplements to the proteins of wheat flour. They found that soybean, peanut and cottonseed flours contain proteins of high nutritive value and offer an excellent means of supplying dietary protein to extend and partially replace protein foods of animal origin. These plant proteins are well adapted to enhance the nutritive value of the proteins of wheat flour. The addition of as little as 5 parts of peanut, soybean or cottonseed flour to 95 parts of wheat flour produced mixtures containing 16 to 19 per cent more protein than wheat flour alone and a protein combination that was definitely superior in its growth promoting value to the same quantity of protein from wheat flour.

Journal of Urology, Baltimore

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Müllerian Duct Cysts. C. L. Deming and R. R. Berneike.—p. 563.
Supernumerary Kidney with Clear Cell Carcinoma. M. Exley and W. S. Hotchkiss.—p. 569.
*Renal Aplasia: Study of 16 Cases. E. F. Nation.—p. 579.
*Thrombosis of Renal Vein. W. F. Melick and A. E. Vitt.—p. 587.
Primary Tumors of Kidney. A. L. Shaheen, C. Cassano and J. R. Lisa.—p. 597.
Renal Hemangioma: Obscure Cause of Hematuria. A. Rottino and H. Mohan.—p. 601.
Primary Epithelioma of Ureter: Follow-Up Study of 18 Cases with Addition of 9 New Cases. V. S. Counseller, E. N. Cook and P. H. Seefeld.—p. 606.
Tumors of Ureter. S. McMahon.—p. 616.
Papillary Carcinoma of Bladder with Extensive Metastases: Case Report; Autopsy. N. P. Rathbun.—p. 623.
Metabolism of Isolated Prostatic Tissue. E. S. G. Barron and C. Huggins.—p. 630.
Secondary Carcinoma of Testicle Following Carcinoma of Prostate. I. Helfert and B. M. Pinck.—p. 635.
Metastatis in Epididymis from Cancer of Prostate: Case Report. M. A. Humphrey.—p. 641.
Primary Carcinoma of Anterior Male Urethra: Case Report. R. F. Hickey and R. C. Coleman Jr.—p. 643.
Malaria as Complication in Genitourinary Tract Disease. A. I. Folsom and H. A. O'Brien.—p. 646.
*Podophyllin Treatment of Condylomata Acuminata. O. S. Culp, M. A. Magid and I. W. Kaplan.—p. 655.

Renal Aplasia.—Nation believes that the term renal aplasia should be reserved for incompletely or defectively developed kidneys to distinguish the condition from renal agenesia, in which no vestige of renal tissue is to be found. There are clinical and embryologic reasons for restricting the use of the term still further. To distinguish renal aplasia from hypoplasia and secondary atrophy it has been used properly only to denote the presence of tissue of metanephric origin which has never developed renal function or has undergone congenital atrophy. Confusion can be avoided by use of the criteria established by Gutierrez: "No true kidney; no evidence of pelvis; absence of true renal pedicle; renal artery small or absent; ureter incompletely developed and not patent; no excretion of urine; no renal function; histologic section of the supposed renal mass reveals glomeruli and tubules, showing arrest of development of renal organ." All of the cases designated as renal agenesia, aplasia and hypoplasia among approximately 27,000 necropsies performed at the Los Angeles County General Hospital were studied. There were 16 cases of true renal aplasia. Its incidence in this series was about the same as that of renal agenesia. Renal aplasia usually results from failure of proper contact between the ureter (collecting tubule system) and the metanephros. Three cases were bilateral. The right and left kidneys were involved with equal frequency. Nine of the patients were males and 7 were females. Six of the 9 patients living more than one month died as a result of hypertension, each having extensive disease of the functioning kidney. Four patients, 3 females and 1 male, had developmental defects of the genital tract. A case of persistence of the metanephros without a ureter is reported. Renal aplasia can seldom be differentiated clinically with certainty from renal agenesia. Surgical exploration for and removal of an aplastic kidney are indicated (1) for the relief of pain, (2) in patients with intractable hypertension and no evidence of disease of the functioning kidney and (3) in cases of hypertension in which pyelonephritic contracture or renal hypoplasia cannot be excluded.

Thrombosis of Renal Vein.—Melick and Vitt describe a case of thrombosis of the renal vein in which blood prothrombin times were obtained preoperatively. A retrograde pyelogram was secured in a normal fashion within a short time after the onset of the thrombosis, which showed the early roentgenologic changes of renal vein thrombosis. They believe that this is the first time that such a pyelogram has been obtained. In the pyelogram which was made within eighteen hours of the onset, as judged by the pain and tenderness, the swelling had not completely occluded the renal pelvis. The picture showed a renal pelvis irregular in outline and irregularly filled. In adults, renal vein thrombosis may be due to primary hematogenous pyelonephritis, with resultant thrombosis within the renal cortex and later extension to the pedicle. It may also be due to the involvement of the pedicle by infection from rupture of a cortical abscess or a perinephric abscess. Thrombosis of the renal vein may be part of a progressive, ascending inflammatory process involving first the vessels of the pelvis or lower extremity and then the inferior vena cava and its higher branches. In infants the thrombosis is almost always secondary to severe ileocolitis or gastrointestinal upsets. One case in an infant was secondary to a primary pneumonitis. If the possibility of such thrombosis is kept in mind, the diagnosis should be made without difficulty. The onset is usually sudden; there are fever, pain and tenderness in the affected side. On palpation the kidney has been found to be enlarged in every case reported. The kidney is also freely movable and tender. Usually there are signs of infection and severe toxicity. Frank hematuria or microscopic hematuria has been present in almost every case. In infants a history of previous ileocolitis is obtained. In adults the history of a previous thrombophlebitis of the pelvis or lower extremity is a common finding. Immediate nephrectomy seems to be the treatment of choice. A possible aid in the treatment may be the use of an agent such as dicumarol to prolong the prothrombin time. This agent must be used with great caution.

Podophyllin Treatment of Condylomata Acuminata.—Culp and his associates used podophyllin in the treatment of 100 young men with condylomata acuminata in the genitourinary section of the station hospital of Camp Bowie, Texas. Three of the patients also had chancres and 1 had acute gonococcic urethritis, which did not complicate or prolong the condylomata treatment. The remaining patients did not have venereal disease. All but 7 patients were treated as outpatients while on full field duty. The lesions were confined to the penis,

perineum and anal area. Twelve patients had been treated by other methods (6 with acid solution of mercuric nitrate, 6 with electrofulguration) without complete disappearance of the growths or with early recurrences. In 62 cases treatment consisted of topical applications of 25 per cent podophyllin in liquid petrolatum with a cotton swab. This is prepared by suspending the crude podophyllin in liquid petrolatum and shaking well before each administration. No discomfort was experienced during the application and no anesthesia was required. Only 6 patients required more than one treatment. Most patients were cured within two to three days. The condylomas quickly turned white and dropped off, leaving a smooth, nonulcerated base with no gross scarring. Only 2 recurrences have been reported from this group. The two responded promptly to the same type of therapy. In 35 cases the podophyllin was applied in a paste prepared by mixing the crude powder with water until the desired consistency was obtained. The drug appears to be equally efficacious when employed in this form and may be kept more localized. Only 2 patients required more than one application of the paste. The surrounding normal tissue usually is unaffected by the drug, but in isolated cases of extensive application under a tight prepuces some balanitis may result. Occasionally circumcision will be advisable because of the chemical balanitis and secondary preputial edema, but disappearance of the condylomas simplifies the surgical procedure.

Medical Annals of District of Columbia, Washington

13:213-250 (June) 1944

Treatment of War Wounds. F. R. Moore.—p. 213.
Clinician Looks at Present Day Treatment of Malaria. H. F. Dowling. —p. 217.
Surgical Aspects of Management of Tetanus: Report of Case. F. G. Burke.—p. 221.
Two Cases of Constrictive Pericarditis. W. M. Yater and H. L. Hirsh. —p. 223.

13:251-284 (July) 1944

Therapy of Burns. P. A. Caulfield.—p. 251.
Comparative Study of Action of Globulin Insulin with Other Forms of Insulin. M. Protas.—p. 254.
Further Observations on Continuous Caudal Anesthesia. G. J. Ellis and J. B. Sheffery.—p. 258.
Pyrogenic Reaction to Use of Thiouracil for Exophthalmic Goiter: Report of Case. J. P. Kenrick and W. M. Yater.—p. 263.

Military Surgeon, Washington, D. C.

95:1-88 (July) 1944

Diets of Explorers. V. Stefansson.—p. 1.
Cold—R. A. F.'s Other Enemy—Is Beaten. G. L. Keynes.—p. 3.
Analysis of 150 Cases of Cardiovascular Disease in World War II Veterans. A. H. Traum and Blanche B. Wilcox.—p. 5.
Meningococcus Meningitis. F. L. Price and R. A. Mayer.—p. 11.
Veterinary Service at Army Post. D. M. Campbell.—p. 15.
Army Foot Disabilities. W. H. Burnham.—p. 20.
Meningococcal Conjunctivitis: Report of 3 Cases. C. E. Bauer, E. A. Gall and C. D. Cox.—p. 24.
Treatment of Pilonidal Cysts by Excision and Primary Closure. V. L. Barker and G. H. Clark.—p. 27.
Roentgen Therapy with Army X-Ray Field Unit. E. W. Egbert. —p. 30.
*Cardiac Strain: Myocardial Infarction Without Coronary Artery Disease: Case Report. W. K. Simmons and S. A. Wolfson.—p. 33.
Treatment of War Wounds. R. M. Hardaway.—p. 37.
Relation of Medication to Treatment of Fusospirochetal Infections of Mouth. J. H. Klock.—p. 42.
Fractures of Jaws. A. M. Maris.—p. 43.
Strabismus in Army. H. D. Rosenbaum.—p. 48.
Atypical Allergic Manifestations, Their Identification and Treatment. J. A. Rudolph.—p. 52.
Acute Rhinitis and Sinusitis: Suction Displacement Treatment with Vegetable Oils. F. G. Fox.—p. 56.
New Source of Penicillin in Treatment of Chronic Gonorrhea. D. W. Atcheson.—p. 58.
New Suture for Use in Muscle Recession Operations. C. B. Foster. —p. 62.

Myocardial Infarction Without Coronary Artery Disease.—Simmons and Wolfson report that a man aged 31 was hospitalized because of substernal pain which radiated to the left shoulder and down the inner aspect of the arm to the third and fourth fingers. He had been free of complaints up to the day of illness. Immediately after the noon meal he attempted to climb a sharply graded mountain approximately 1,600 feet in height. About one third of the way up he experienced some nausea and stopped to rest. After a brief period he continued climbing but soon felt a substernal fulness as though 'gas was crowding his heart.' He rested a second time and proceeded to climb. About two thirds of the way up he experienced a substernal ache. He rested a third time and climbed more. A few minutes later the pain became severe and radiated to the left shoulder and down the inner aspect of the left arm to the third and fourth fingers. This time the pain persisted in spite of rest. The patient was taken by litter and ambulance to the hospital. During hospitalization he continued to have mild substernal distress and numbness and tingling of the left arm in decreasing intensity through the fourth day. The patient was at bed rest for three weeks, was then allowed up for a short interval at a time in a wheel chair and was gradually permitted restricted activity. Convalescence was uneventful. The problem of acute heart strain resulting in myocardial infarction in the absence of coronary artery disease is still a controversial subject. Parsonnet and Bernstein concluded that acute heart strain occurs in the healthy as well as the diseased heart, reasoning that the man who is working at full capacity, and who then adds a little more to this exertion, may suddenly find himself with an inadequate blood supply to a portion of his myocardium, with resultant changes identical in every respect to those seen after a coronary occlusion or thrombosis. The sequence and progress of events in the case here reported make such an occurrence likely. The authors consider it probable that other such cases will be observed with greater frequency as more men are inducted into the service and participate in physical exertion foreign to them in civilian life.

Nebraska State Medical Journal, Lincoln

29:201-232 (July) 1944

Thrombosis and Embolism of Larger Arteries. F. M. Conlin.—p. 204.
Medical Treatment of Peripheral Vascular Diseases. R. L. Traynor. —p. 208.
Vasomotor Neuroses. A. E. Bennett.—p. 211.
Surgical Aspects of Treatment of Peripheral Vascular Disease. F. C. Hill.—p. 215.
Refrigeration Treatment of Peripheral Vascular Diseases. R. L. Egan. —p. 217.
Diseases of Peripheral Vessels. F. L. Dunn.—p. 219.
Penicillin—Indications, Contraindications, Mode of Administration and Dosage. C. S. Keefer.—p. 222.

New England Journal of Medicine, Boston

231:1-34 (July 6) 1944

Subacute Degeneration of Brain in Pernicious Anemia. R. D. Adams and C. S. Kubik.—p. 1.
Part Time Protective Environment and Working Parole as Adjuvant in Treatment of Alcoholism. J. Thimann.—p. 9.
Epidemic Keratoconjunctivitis: Report of Case with Marked Systemic Manifestations. J. J. Curry and F. C. Lowell.—p. 11.
Physiologic Significance of Vitamin C in Man. M. Pijoan and E. L. Lozner.—p. 14.

231:35-70 (July 13) 1944

Hodgkin's Disease: II. Pathology. H. Jackson Jr. and F. Parker Jr. —p. 35.
*Pemphigus: Further Report on Chemical Studies of Blood Serum and Treatment with Adrenocortical Extract, Dihydrotachysterol or Vitamin D. W. F. Lever and J. H. Talbott.—p. 44.
Diseases of Veins. J. Homans.—p. 51.

Treatment of Pemphigus.—In two recent communications Lever and Talbott reported that significant changes in the electrolyte content of the blood serum occur in patients with pemphigus vulgaris. In an attempt to correct the chemical changes, they have treated patients with pemphigus vulgaris with adrenal cortex extract, dihydrotachysterol or massive doses of vitamin D. In the two previous publications observations on 15 patients with pemphigus were reported; since then an additional 17 patients have been studied. The authors report chemical findings in the blood serum of these patients and evaluate the effectiveness of adrenal cortex extract, dihydrotachysterol and massive doses of vitamin D. They recognize six types: pemphigus vulgaris acutus (Brocq's pemphigus subaigu malin), pemphigus vegetans, pemphigus vulgaris chronicus, pemphigus foliaceus, pemphigus erythematosus (Senear-Usher type of pemphigus) and pemphigus conjunctivae. In pemphigus vulgaris acutus, pemphigus vegetans and pemphigus vulgaris chronicus the amount of sodium, chloride, calcium and protein in the blood serum was found to be reduced. These changes were more pronounced in pemphigus vulgaris acutus and pem-

phigus vegetans than in pemphigus vulgaris chronicus. The degree of reduction usually corresponded to the severity of the clinical condition and the amount of skin involved. No etiologic significance can be attached to the chemical changes. They are regarded as a secondary symptom produced by the disease. Thirty-two patients with pemphigus were treated with adrenal cortex extract, dihydrotachysterol or massive doses of vitamin D. Encouraging results were obtained in several cases of pemphigus vulgaris acutus, pemphigus vegetans and pemphigus vulgaris chronicus. The results of treatment in cases of pemphigus foliaceus, pemphigus erythematosus and pemphigus conjunctivae were disappointing. The treatment tends to correct the reduction of sodium, chloride, calcium and protein encountered in such patients. Since it is believed that the chemical changes are secondary symptoms produced by the disease, the treatment is merely symptomatic.

New York State Journal of Medicine, New York

44:1391-1502 (July 1) 1944

Management of Disorders of Thyroid: II. Myxedema. Conferences on Therapy.—p. 1468.
Ringworm Infection of Scalp in Harlem Area: Discussion of Present Inadequate Methods of Control. G. A. Spencer.—p. 1486.
Botulism: Report of Recovery After Serum. W. L. Marsden.—p. 1492.

44:1503-1614 (July 15) 1944

Nephroptosis and Nephropexy: Critical Review of 55 Cases. C. G. Bandler, B. D. Pinck and P. R. Roen.—p. 1541.
Facial Paralysis—Prosopoplegia. H. R. Merwarth.—p. 1546.
Stability of Fasting Blood Sugar in Diabetes Mellitus. H. O. Mosenthal and F. U. Lauber.—p. 1555.
Cutaneous Manifestations of Tuberculosis. A. C. Cipollaro.—p. 1557.
Tissues Dose Estimation in Combined Roentgen and Radium Therapy for Carcinoma of Uterine Cervix. W. E. Howes.—1563.
Role of Motivation in Psychotherapy. L. R. Wolberg.—p. 1569.
Abuse of Vasoconstrictors in Hay Fever and Vasomotor Rhinitis. L. Sternberg.—p. 1573.

Oklahoma State Medical Assn. Jour., Oklahoma City

37:239-284 (June) 1944

Acute Surgical Abdomen. V. C. Tisdal.—p. 239.
Common Orthopedic Conditions in Childhood. D. H. O'Donoghue. —p. 242.
Intramedullary Transfusions in Infants. C. M. Bielstein.—p. 243.

37:285-338 (July) 1944

*Restoration of Breathing in Emergencies and Maintenance of Respiration in Nonbreathing Patients. C. K. Drinker.—p. 285.
Trends in Public Health. H. S. Mustard.—p. 293.
Chronic Digestive Disturbance in Elderly Patient. D. D. Paulus. —p. 297.

Restoration of Breathing.—Drinker says that if artificial respiration is applied at the time at which breathing stops, chances of recovery are 100 per cent. From the second to the sixth minute the chances decrease abruptly, and from the sixth to the twelfth minute the chances of regaining breathing are possible but slight. Large numbers of people requiring instant application of artificial respiration are treated first by laymen. The prone pressure method of artificial respiration, described by Schafer in 1903, is the best for lay use. The face down position, coupled with the pressure used, provides more certain and better drainage of the air passages than is possible for the layman provided with any sort of mechanical device. In the Silvester method, in which the chest is stretched into fullest possible passive expansion by bringing the arms into full extension above the head, the patient is served more by the inherent elasticity of all the tissues and less by muscle tone. The physiologic soundness of the Silvester method is, however, negated by the position of the patient on his back, which does not favor drainage from the mouth and throat, and even more by the fact that the inspiratory expansion of the chest attained by arm extension may be too slight to provide an adequate minute volume. However, for a person with an open wound of the abdomen or for a woman in the last stages of pregnancy the Silvester method may have to be used. The author describes the discovery and mode of action of the tilting method of Eve. He regards the Bragg-Paul pulsator as the best of the many methods which operate by mechanical imitation of the prone pressure method. Occasional successes and mechanical attractiveness of the blow and suck machines do not overbalance physiologic unsuitability. The value of oxygen and carbon dioxide in stimulating breathing is evaluated. When the respirator was first introduced, it seemed as if a way had been opened for saving almost all the victims of acute poliomyelitis. This has not proved to be true, and if the first patient had had bulbar poliomyelitis instead of a spinal type ideal for treatment, enthusiasm for the respirator would have been less. The respirator will always save the lives of some patients. There are a larger number it will not save. The Cuirass type respirators give the patient freedom and they make nursing care far less difficult, but they do not work well unless some ability to breathe is retained. The respirator enclosing the entire body is capable of giving good ventilation in the presence of complete respiratory paralysis.

Radiology, Syracuse, N. Y.

43:1-106 (July) 1944

*Clinical and Radiologic Studies of Pulmonary Mycosis. W. A. Johnston and J. Heydemann.—p. 1.
Fungus Disease of Chest. V. L. Peterson.—p. 14.
Roentgen Therapy of Sinusitis, with Special Adapter. F. C. Christensen.—p. 21.
Relation of Coincident Anomalies of Gastrointestinal Tract and Renal Ptosis to Digestive Disturbance. W. E. Reiley.—p. 30.
Diagnosis and Treatment of Osteoclastoma. J. F. Brailsford.—p. 35.
Lung Abscess Secondary to Stenosing Bronchiogenic Carcinoma. E. Kraft.—p. 39.
*March Fracture, Including Others Than Those of Foot. G. D. Carlson and R. F. Wertz.—p. 48.
Influence of Irradiation of Ovaries on Estrus and Neoplastic Development in Marsh Buffalo Mice. F. Bischoff, H. J. Ullmann and Louise P. Ingraham.—p. 55.

Clinical and Radiologic Studies of Pulmonary Mycosis.—Johnston and Heydemann report several cases of mycotic infection encountered in a period of eight months. They stress that classification of yeast infections is a difficult procedure. Literature dealing with mycotic infections of the lung demonstrates little, if any, difference between the history, physical findings, pathology and sequelae of the various types of yeast infection. The reported cases demonstrate some of the difficulties encountered in evaluating the importance of yeast in the sputum. There may be a pure infection; there may be a secondary infection which assumes a primary role; the yeast may be an incidental finding of no clinical significance; it may be a contaminant from a receptacle. The authors feel that yeast infections are much more prevalent than ordinarily thought. As proved in the literature and in the cases reported, too many mycotic infections go unrecognized until shortly before a terminal condition exists. The recognition of mycotic infections of the lungs is in great part the responsibility of the roentgenologist. He must stimulate further study to eliminate or prove the presence of a mycotic infection.

March Fracture.—Carlson and Wertz point out that, although march fracture shows the highest incidence in the foot, it is occasionally encountered in other bones. Their report is based on 70 cases referred to the roentgenologic service of Brooke General Hospital, Fort Sam Houston, Texas, from January 1942 to April 1943, comprising 66 involving the metatarsals, 3 the femur and 1 the os calcis. Practically all cases presented varying degrees of periosteal reaction, while only 31 showed definite fracture lines. The greatest amount of callus appeared from one to two months after the onset of symptoms. Of the 66 men with metatarsal fractures, only 5 were placed on limited duty. Of the remaining 61, 11 received treatment in the outpatient clinic, consisting chiefly of arch supports, proper fitting of shoes and return to full duty. The other 50 patients were hospitalized, treatment consisting in the application of a plaster walking boot for an average of three weeks, followed by ten to fourteen days of physical therapy and proper arch supports. All 50 returned to full duty. All 3 femoral fractures involved the distal portion of the shaft with no displacement. One man returned to full duty and 2 were placed on limited duty. The patient with an os calcis fracture was likewise placed on limited duty. A diagnosis of march fracture may be made in many cases on the basis of periosteal proliferation, even in the absence of a fracture line. This condition is an example of pseudofracture. The all important factor in diagnosis is to avoid a mistaken interpretation of malignant bone tumor, leading to amputation or other unnecessary radical therapy.

Surgery, Gynecology and Obstetrics, Chicago

79:1-112 (July) 1944

Definition of Objectives and Importance of Controls in Evaluating Local Use of Sulfonamides in Wounds. J. S. Lockwood.—p. 1.
Thyroid Function as Factor in Gallbladder Disease and Formation of Gallstones: Clinical and Experimental Study.—p. 10.
Presacral Neurectomy for Intractable Vesical Pain and Neurogenic Vesical Dysfunction. C. E. Jacobson, W. F. Braasch and J. G. Love.—p. 21.
Some Complications in Surgical Handling of Carcinoma of Left Colon and Rectum. H. C. Saltzstein and J. Kelly.—p. 27.
*Ligation of Thoracic Duct and Posthemorrhage Plasma Protein Level. Co Tui, I. S. Barcham and B. G. P. Shafiroff.—p. 37.
Local Effect of Topic Anesthetic Drugs on Motility of Gastrointestinal Tract of Human and Dog. N. Crohn, W. H. Olson and H. Necheles.—p. 41.
*Relation of Vitamin C to Anesthesia. K. H. Beyer, J. W. Stutzman and B. Hafford.—p. 49.
Reconstruction of Common Bile Duct. J. Walton.—p. 57.
*Deep Quiet Venous Thrombosis in Lower Limb: Preferred Levels for Interruption of Veins; Iliac Sector or Ligation. J. Homans.—p. 70.
*Canavalin, New Enzymatic Bactericidal Agent: Preliminary Report. D. L. Farley.—p. 83.
Helmet for Protection Against Craniocerebral Injuries. L. Davis.—p. 89.
Surgery of Pelvic Colon and Rectum. J. W. Baker.—p. 92.
Experimental and Clinical Study on Use of Adult Animal Tissue Extract in Acceleration of Wound Healing: Preliminary Report. R. S. Hoffman and J. A. Dingwall.—p. 103.

Ligation of Thoracic Duct and Posthemorrhage Plasma Protein Level.—Co Tui and his associates reported in a previous communication that after hemorrhage the concentration of proteins in the thoracic duct lymph undergoes a considerable increase. It was suggested that the lymph serves an important role in the compensatory mechanism of hemorrhage, not only as a pathway for fluid, but also as a source of protein replacement. The present work is an attempt to assay the role of the thoracic duct, the principal lymph collecting channel, in the maintenance of the plasma protein level after acute hemorrhage. The posthemorrhage hematocrit and plasma protein values were determined in two groups of dogs, one with the thoracic duct ligated and the other with the thoracic duct intact. In the group with the intact thoracic duct the prehemorrhage level of plasma proteins was achieved in from twenty-four to forty-eight hours. In the group with the thoracic duct ligated this level was not reached until after eight days. On the basis of this finding and on the basis of the finding previously reported of increase in protein concentration in thoracic duct lymph following hemorrhage, it is postulated that the thoracic duct and, therefore, the lymphatic system is an important pathway not only for the return of proteins from the capillary filtrate to the blood but also for the mobilization of proteins from protein depots in the body.

Relation of Vitamin C to Anesthesia.—Beyer and his associates aimed to determine (1) the effect of anesthesia on the vitamin C content of plasma and (2) the effect of C avitaminosis on the animal's response to anesthetic agents. The anesthetics used were diethyl ether, vinethene, chloroform and cyclopropane. The first three agents were given by the "open drop" technic to 8, 6 and 12 dogs respectively. The animals used for the "open drop" anesthetizations were not intubated. None of the animals were given premedication. All the dogs were maintained at light surgical anesthesia for forty-five minutes. Six dogs were anesthetized by rebreathing a cyclopropane-oxygen mixture from a 5 liter rubber bag. Closed system anesthesia with diethyl ether was employed for 12 dogs. Guinea pigs were used to study the effect of the vitamin C content of an animal on its response to anesthesia. During and at least for the first seven hours following a forty-five minute period of anesthesia the dog plasma ascorbic acid level increased noticeably. Subsequently the plasma level fell within twenty-four hours to below the preinduction control levels. These observations held for cyclopropane, ether, vinethene and chloroform independently of the mode of anesthetization. This effect was due to the anesthetic agent and not to an inadequate oxygen intake, which tended only to reduce the rate and extent of the mobilization and to decrease or abolish the twenty-four hour fall in plasma ascorbic acid level. The initial mobilization and secondary depletion of plasma ascorbic acid which the authors observed fits in with the results of others. It is apparent that ascorbic acid is readily released from some source under the influence of anesthesia, but there is no explanation as to how it is contained in or released by tissues. While inadequate tissue oxygenation is not responsible for the mobilization or depletion of the plasma vitamin C level, it does somehow quantitatively influence the extent of these phenomena, tending to diminish both fluctuations. Vitamin C deficiency caused guinea pigs to be more quickly inducted into anesthesia and more profoundly depressed by a given concentration of ether, chloroform or vinethene. The vitamin C deficient animals recovered slowly, if at all, from a duration of anesthesia which had little apparent after-effect on guinea pigs that had received the same scorbutogenic diet but which were injected with 30 mg. of ascorbic acid daily.

Deep Quiet Venous Thrombosis in Lower Limb.—Thrombosis of a quiet type (phlebothrombosis) commencing in the deep veins below the knee is the source of most nonobstructive processes threatening pulmonary embolism as well as most obstructive inflammatory ones responsible for painful swelling of the whole lower limb (thrombophlebitis). Thrombophlebitis of the fully obstructive type presents no indication for operations but rather for release of the associated vasoconstriction by lumbar sympathetic block. It is desirable and usually possible to distinguish an early stage of quiet, deep venous thrombosis when the process is still confined to the lower leg or has given rise to an unattached propagating thrombus in the popliteal and femoral veins, threatening pulmonary embolism. An advanced stage of quiet, deep venous thrombosis, more or less adherent but not obstructive, can also be distinguished. Thrombosis will often have propagated above the inguinal ligament into the external and, occasionally, especially on the left, the common iliac vein. With such a process, thrombosis of the deep veins among the muscles of the thigh (profunda femoris system) is usually associated. Thrombosis in these deep veins may even be present when no thrombus is found on exploration of the superficial femoral vein below the profunda. Though interruption of the common femoral vein offers a considerable degree of protection against subsequent serious pulmonary embolism, it cannot give the assurance of a yet higher division, for example, in the common iliac vein. If the common iliac vein is divided, blood can escape via the common femoral through the deep epigastric, the deep circumflex iliac and particularly through the hypogastric vein. It may pass by way of this last channel through rectal vessels into the inferior mesenteric vein or to the opposite side of the pelvis, and in women an additional collateral field is offered by the uterine and ovarian veins. Clinical experience indicates that while serious venous congestion and swelling sometimes follow interruption of the common femoral vein when the superficial and deep femoral systems are partly filled with adherent thrombus, section or ligation of the common iliac vein seems to leave no such troubles behind. Homans presents observations on interruption of the vena cava. This operation is probably indicated in the presence of bilateral thrombosis, which is believed to have arisen in the main venous stem, on both sides, to or about the level of the inguinal ligaments. It is to be preferred to separate ligation of each common iliac vein.

Canavalin, New Enzymatic Bactericidal Agent.—Farley directs attention to his discovery of a new enzymatic bactericidal agent called canavalin. He describes the method of its preparation, experimental data showing its in vitro action and certain preliminary information as to its clinical use for patients. Canavalin is a mixture of an enzyme and a co-enzyme solution separately extracted and mixed. The enzyme portion is an extract of jack bean (Canavalia ensiformis—8). It also has been extracted from soy beans, liver and white potatoes. The jack bean is the best source. The co-enzyme portion of canavalin is associated with the vitamins of the water soluble B group. Thiamine and riboflavin are used to produce in vitro a supply of co-enzyme. This co-enzyme is called "vitatropin" and has the physical characteristics usually possessed by a co-enzyme—thermostability, filtrability and the property of being precipitated from a watery solution by an organic solvent. Both enzyme and co-enzyme have been found by the author to be present in normal blood. In vitro studies revealed that canavalin renders both gram positive and gram negative organisms incapable of growth. The author reports 13 cases of lobar pneumococcic pneumonia treated with canavalin. Every one showed a definite drop in temperature.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

13:219-280 (April) 1944

Dangers and Complications in Treatment of Hemorrhoids. T. H. Ackland.—p. 219.
New Technics and Old Principles. W. B. Parsons.—p. 232.
Traumatic Lesions of Large Blood Vessels Treated in Prison Camp in Germany. B. Moore.—p. 241.
*Acetylcholine Synthesis and Myasthenia Gravis. E. R. Trethewie and R. D. Wright.—p. 244.
Physiotherapy in Chest Surgery. J. I. Hayward.—p. 247.

Acetylcholine Synthesis and Myasthenia Gravis.—Trethewie and Wright investigated the effect of thymic extract on the synthesis of acetylcholine. An increase in acetylcholine synthesis was detected when "normal" thymus was added to brain extracts. A decrease in acetylcholine synthesis was observed when thymus from a severe case of myasthenia gravis was added to brain extract. Three likely explanations of the deficiency in myasthenia gravis are suggested: excess destruction of acetylcholine by esterase, defective utilization of acetylcholine and defective synthesis of acetylcholine. The authors present evidence in support of the rationale of the removal of the thymus in myasthenia gravis.

Brain, London

67:1-68 (March) 1944

Pyramidal Section in Cat. E. G. T. Liddell and C. G. Phillips.—p. 1.
Nature of Transient Outbursts in Electroencephalogram of Epileptics. D. Williams.—p. 10.
Form of Familial Presenile Dementia with Spastic Paralysis. C. Worster-Drought, J. G. Greenfield and W. H. McMenemey.—p. 38.
Meralgia Paresthetica Due to Nodular Lipomatosis and to Traumatic Lesions in Thigh: Reflex Theory of Sensory Neuritis. M. Kelly.—p. 44.
Recovery of Spatial Orientation in Post-Traumatic Confusional State. A. Paterson and O. L. Zangwill.—p. 54.

British Journal of Industrial Medicine, London

1:81-144 (April) 1944

Training of Industrial Nurse. A. J. Amor and Clare Sykes.—p. 81.
Design of Dressing Stations and Control of Wound Infection. W. Gissane, A. A. Miles and R. E. O. Williams.—p. 90.
First Aid Treatment of Burns and Scalds. L. Colebrook, T. Gibson and J. P. Todd.—p. 99.
Burns of Hand. P. H. Jayes.—p. 106.
Prevention and Control of Cutting Oil Dermatitis. E. Collier.—p. 110.
New Aspects of Nutrition. J. R. Marrack.—p. 114.
Medical Service in Industry in U. S. S. R. A. Letavet.—p. 123.

British Journal of Ophthalmology, London

28:261-316 (June) 1944

Eye Department in Middle East General Hospital. H. B. Stallard.—p. 261.
Simple Method for Early Diagnosis of Abnormalities of Pupillary Reaction. H. J. Stern.—p. 275.
Granulation Tumor of Conjunctiva. J. D. J. Freeman.—p. 277.
*Genetics of Retinoblastoma. A. D. Griffith and A. Sorsby.—p. 279.
Encapsulated Orbital Melanoma. J. Foster.—p. 293.
Removal of Nonmagnetic Foreign Body from Vitreous. V. O'Hea-Cussen.—p. 296.

Genetics of Retinoblastoma.—According to Griffith and Sorsby retinoblastoma is a rare tumor. They say that at the Royal Eye Hospital, London, there were seen 59 children with retinoblastoma during the fifty years 1894-1943, and among these there was only one familial group. The pedigree of this familial group has been reported in part on previous occasions, but it is now possible to extend and amplify the previous observations of retinoblastoma in two generations to the observed occurrence of this condition in a member of the third generation. Following brief histories of the 6 affected members of this familial group the author stresses the early age at which the tumors occurred and the great tendency to bilateral involvement in this family. In only 1 of the 6 patients has the lesion been unilateral. After reviewing observations on sporadic retinoblastoma in which the incidence of bilateral involvement is much lower, the authors cite reports from the literature on retinoblastoma in sibs with clear antecedents. These reports show that the mode of inheritance is irregularly dominant. The authors suggest that it is possible that hereditary retinoblastoma is a distinct histologic entity different from the sporadic types.

British Medical Journal, London

1:773-802 (June 10) 1944

Analysis of Shock. V. H. Moon.—p. 773.
Meningitis Due to Pittman and Non-Pittman Strains of H. Influenzae. J. Gordon, H. E. de C. Woodcock and K. Zinnemann.—p. 779.
Sulfonamide Allergy. R. G. Park.—p. 781.
Treatment of Pulp Infection of Fingers in the Field. T. Denness.—p. 782.
Early Operation for Volkmann's Ischemic Contracture. G. A. Pollock.—p. 783.

1:803-832 (June 17) 1944

*Control of Scabies by Use of Soap Impregnated with Tetra-Ethylthiuram Monosulfide ("Tetmosol"). R. M. Gordon, T. H. Davey, K. Unsworth, F. F. Hellier, S. C. Parry and J. R. B. Alexander.—p. 803.
*Carrier State in Sonne Dysentery. J. G. Hailwood.—p. 806.
Analysis of Colles's Fracture. S. C. Rogers.—p. 807.
Outbreak of Puerperal Sepsis Due to Single Type of Hemolytic Streptococcus: Its Investigation and Remedy. M. Kenny and Mary Barber.—p. 809.
*Narcoanalysis with Nitrous Oxide. C. H. Rogerson.—p. 811.

Control of Scabies by Soap Impregnated with Tetra-Ethylthiuram Monosulfide.—Gordon and his associates show that tetraethylthiuram monosulfide ("Tetmosol") when combined with soap in 5, 10 and 20 per cent dilutions retains its sarcopticidal properties. In rat scabies due to Notoëdres, tetmosol soap produced a local therapeutic effect when used daily or weekly, the local infection being cured in some cases, the mite population being reduced in others. Six men suffering from Sarcoptes scabiei infection received five to six baths with 20 per cent tetmosol soap on successive days; all were cured. A further series of 110 men received three baths with 20 per cent tetmosol soap over a period of a week. All remained under observation for at least six weeks, at the end of which period 88 were found to have been cured and 22 to have relapsed. Although it has been shown that the repeated use of tetmosol soap cures a high proportion (80 per cent) of cases of scabies, the soap is unlikely to supersede any of the standard methods employed which result in more than 90 per cent cures. On the other hand, the simplicity of supplying a tablet of soap and instructing the patient to use it when bathing suggests the possible value of the soap in communities which have become disorganized as a result of war and in which it is not practicable to employ standard methods of treatment. Generalized use, however, will be possible only if dermatitis does not follow prolonged use of the soap. The authors have shown that the incidence of dermatitis following the use of the soap for short periods is low, and that it was low also among a small number of people tested over a prolonged period; but no estimate can be made of the risk of dermatitis until an extensive trial with a large number of individuals has been carried out.

Carrier State in Sonne Dysentery.—The severe outbreak of dysentery described by Hailwood occurred in an artillery regiment in July and August 1943. At least 1 Sonne positive case was found among the personnel in each cook house, but only 1 man was found whose history of diarrhea was outside the limits of the incubation period. In August 1942 he had been admitted to a camp reception station with acute enteritis, pyrexia, colic and frequent stools containing blood and mucus. In November 1942 he was posted to this regiment and in February 1943 was employed in the sergeants' quarters. His duties included providing the sergeants with cups of tea, bread and butter, and so on. At this period there was a mild outbreak of enteritis in the regiment, 80 cases in all, of which the majority were sergeants. For some months he was then employed on the guns, but on July 7 he was detailed for duty as orderly in one of the regimental cook houses. His job was mainly cutting bread and butter. The first cases occurred about July 20 and were among the battery personnel served from this particular cook house. It is certain that in the course of his duties this man visited the other regimental cook houses on numerous occasions, and thus infection would be conveyed to food and personnel in them, with consequent spread of the epidemic to the remaining two batteries. He did not so visit the permanent staff cook house, and no cases occurred among

the personnel served from there. This man had had no symptoms since his moderately severe attack twelve months previously, but his stool showed a heavy infection of Bacterium sonnei. The removal of all infected cooks from the cook house immediately stopped the outbreak. The opinion is put forward that the so-called symptomless carrier of Sonne dysentery is common but that a history of diarrhea at some time in the past can usually be obtained.

Narcoanalysis with Nitrous Oxide.—Rogerson cites disadvantages of narcoanalysis by means of barbiturates and says that during the past twelve months a way has been found of overcoming these objections by the substitution of inhaled nitrous oxide for intravenous barbiturates as the anesthetic agent. The Minnitt obstetric gas-air analgesia apparatus proved ideal. The flow of gas is regulated by the patient's breathing, so that there is no waste. The patient himself controls his intake of gas and can stop at any moment; fear is thus almost entirely eliminated. During the whole of the induction period gentle suggestions are given that he is becoming relaxed, that painful ideas will come more readily to his mind and that his thoughts are flowing easily and without restraint. As soon as he drops the mask he is urged to express whatever comes into his mind. In the case of a hysterical fugue he is told that he will relive the forgotten incidents. The author used this method with a considerable number of patients and reports 2 representative cases. He thinks that other methods of narcoanalysis could not have achieved similar results without a far greater expenditure of time. The availability of narcosis "on tap" in the consulting room, ready to be used at any moment in the course of analysis, is a great advantage. Patients themselves express a strong preference for the nitrous oxide technic; when the two have been used in a single case, access to hidden mental conflicts is fully as effective with gas as it is with a barbiturate.

Edinburgh Medical Journal

51:161-208 (April) 1944

Intersigmoid Hernia: Report of Case and Review of Literature. H. D. Wilson.—p. 161.
Military Surgery in Geographic Perspective: Libyan Exercise in Surgical Strategy and Tactics. I. Aird.—p. 166.
Etiology, Prophylaxis and Treatment of Cholecystitis and Cholelithiasis. L. S. P. Davidson.—p. 184.
Acute Schizophrenia in Childhood: Report of Case. Louise F. W. Eickhoff.—p. 201.

Lancet, London

1:745-776 (June 10) 1944

*Management of Minimal Pulmonary Tuberculosis Disclosed by Fluorography. W. D. W. Brooks.—p. 745.
Comminuted Fractures of Mandible: Report on 25 Consecutive Cases from Plastic and Jaw Unit. J. B. Cuthbert.—p. 748.
Human Factor in Military Malaria Control. R. R. Bomford.—p. 750.
Angular Conjunctivitis Treated with Propamidine. F. C. O. Valentine and A. M. Edwards.—p. 753.
Ankylosing Spondylitis. E. Fletcher.—p. 754.
Facial Palsy in Closed Head Injuries, with Prognosis. J. W. A. Turner.—p. 756.
Pyretoelectric Shock Therapy in Schizophrenia. J. Fuster.—p. 757.
Adsorption of Acridines by Gauze. A. Albert and W. S. Gledhill. —p. 759.

Tuberculosis Disclosed by Fluorography.—Brooks says that fluorography has made possible diagnosis of pulmonary tuberculosis on a scale far transcending anything previously achieved among the apparently healthy, and the yield of cases with minimal disease is considerable. Fluorography of 479,373 apparently healthy male personnel of the Royal Navy showed that 6,077 (12.7 per thousand) had radiologic signs of adult type pulmonary tuberculosis. In 47.9 per cent of these the lesion was "minimal." Of 23,344 of the female personnel 213 (9.1 per thousand) had similar evidence of tuberculosis, and the lesion was minimal in 55.4 per cent of these. Similar investigations among civilians will no doubt bring to light large numbers of cases of pulmonary tuberculosis of this slight degree, raising difficult problems of disposal and treatment. In some of these minimal cases the disease is arrested or is retrogressive, but in others it is progressive. Careful study is needed to decide whether the infection is active, and investigation in a hospital is essential. When 2,911 sailors with minimal lesions were first studied in a hospital 16 per cent showed evidence of active infection, while in 63 per cent the disease appeared to be inactive but the stability of the lesions was doubtful. In 21 per cent the disease was arrested. Naval personnel with apparently inactive minimal tuberculosis have been placed on light shore duties and kept under observation. Study of these cases shows that the younger the patient the more likely the disease is to become active and the relapse to be serious. Observations indicate that a diagnosis of apparently inactive minimal tuberculosis in males under 50 should imply outpatient supervision, together with regular inpatient reexamination during the next two years. For patients under 30 this observation should probably last longer. Supervision should be combined with appropriate modifications in the patient's mode of life.

Medical Journal of Australia, Sydney

1:453-476 (May 20) 1944

*Eosinophilia in Tropical Disease: Experiences at an Australian General Hospital. T. E. Lowe.—p. 453.
*Complement Fixation Tests in Meningococcal Infections. J. M. Bonnin. —p. 456.
Fee Principle and Medical Organization. A. E. Brown.—p. 460.

Eosinophilia in Tropical Disease.—Lowe and his colleagues studied the blood picture of men returned from service in tropical areas. Most suffered from more than one tropical illness; combinations of malaria and helminth infections were frequent. Observations were made on the effects of tropical diseases on the eosinophil picture. For comparison the eosinophil counts of normal subjects were obtained. The average reading of the eosinophil count in the control group was 145 per cubic millimeter and the range was from 0 to 700 per cubic millimeter. In 100 patients convalescent from malarial attacks the range of the eosinophil counts was between 0 and 1,350, with an average of 250 per cubic millimeter. Observations in additional selected cases suggest that the upper limit of eosinophilia in these cases may be of the order of 1,750 cells per cubic millimeter. Eosinophilia diminished as time progressed but lasted for at least eight weeks. A pronounced fall by some 50 per cent in the number of circulating eosinophil cells occurs twenty-four to thirty-six hours before the onset of malarial symptoms. After the febrile period, in cases in which treatment is given, the eosinophil cell count rises and regains its previous level in about ten days. In hookworm infection the eosinophilia was due to the presence of adult worms in the intestinal canal. It reached an average figure of 1,800 cells per cubic millimeter. After effective treatment, in two thirds of the cases the eosinophilia has disappeared within four weeks, but in the remaining one third it has persisted for much longer periods. Malaria convalescents with Trichocephalus infection revealed a range of eosinophil cell counts between 240 and 1,700 cells per cubic millimeter. Although the average of these figures is higher than that for subjects convalescent from malaria, it is within the range of postmalarial eosinophilia, so that Trichocephalus cannot be considered as a frequent cause of significant eosinophilia. The patients with Strongyloides stercoralis infection all had pronounced eosinophilia, but they either had coexisting infection with other helminths or were convalescent from malaria. However, the eosinophil cell count did not fall during the weeks of observation, as would have been expected if the postmalarial phase was contributing greatly to the condition. Cases of infection with Ascaris lumbricoides are associated with eosinophil cell counts of the same order as those accompanying Strongyloides infection. Under the heading of unexplained eosinophilia the authors say that 14 patients convalescent from malaria have shown a persistent eosinophilia for which no adequate explanation can be offered. They think that in malaria and in the helminth infections studied two different factors are concerned with the production of eosinophilia: (*a*) a nonspecific factor similar to that present in bacterial infections and (*b*) a specific factor due to helminth infection.

Complement Fixation Tests in Meningococcic Infections.—Bonnin shows that a close morphologic cultural and serologic relationship exists between meningococci and gonococci. It is known that a positive response to the gonococcus complement fixation test may be obtained in cases of meningococcic meningitis. The object of this investigation was to determine whether this test would be of use in the diagnosis of obscure meningococcic infections. The gonococcus complement

fixation test and the meningococcus complement fixation test were made in cases of meningitis, and control tests were performed with the serum of 58 subjects all of whom denied having had gonorrhea in the past. The gonococcus complement fixation test was found to produce a positive result in some cases of meningococcic infection. It also produced a positive response in 2 of 57 control cases. Thus it should not be regarded as absolute evidence of gonococcic infection. The meningococcus complement fixation test performed with two varieties of antigen was found to be too open to false positive results to be of any diagnostic value. The gonococcus complement fixation test may be used as an aid to diagnosis in obscure cases of meningococcic septicemia. The result should be interpreted in association with the clinical picture. The gonococcus complement fixation test may show that chronic meningococcic septicemia presenting in other than the well recognized form is more common than is generally realized. Though it cannot be used as the sole diagnostic criterion, it may be used as an indication for chemotherapy.

Ophthalmologica, Basel

104:289-348 (Dec.) 1942

Arteriosclerotic Atrophy of Optic Nerve. K. T. A. Halbertsma.—p. 289.
Ocular Aspects of Cushing's Disease. M. Radnót.—p. 301.
*Mode of Inheritance of Choroideremia. J. Goedbloed.—p. 308.
Incomplete Glaucoma: Study of Glaucoma Without Hypertension. R. Weekers.—p. 316.

Choroideremia.—Goedbloed states that in patients with choroideremia the external examination of the eyes does not reveal anything abnormal. The media are clear. The characteristic alterations are found in the background of both eyes. With the exception of the optic disk and the region of the macula the whole fundus shows a grayish or greenish white color which gives the impression of almost complete absence of the pigment layer of the retina and the choroid. The term choroideremia is probably a misnomer, but it is impossible to say so definitely because of the complete lack of histologic information about this rare condition, of which only 34 cases have been reported in the literature. The author discovered this condition in a man aged 38. He had the opportunity to subject to ophthalmologic examination also the patient's mother and only sister, whose fundus condition is best characterized as nonsyphilitic pepper and salt fundus. Discussing the hereditary transmission of choroideremia, the author reviews some reports from the literature, particularly the report of Schutzbach, who, in a family that could be followed for four generations, detected 3 cases of choroideremia and several cases of a fundus condition that closely resembled syphilitic pepper and salt fundus although the Wassermann test in all cases was negative. This picture was quite identical with that found in the author's female patients. He concludes that choroideremia has an intermediate gonosomal (sex linked) heredity.

Medicina, Mexico, D. F.

24:223-246 (June 25) 1944. **Partial Index**

*Importance of Study of Bone Marrow, Especially of Megakaryocytes in Hemorrhagiparous Diseases. L. Sánchez Yllades and A. Ramírez Mendoza.—p. 223.

Bone Marrow Megakaryocytes in Hemorrhagic Diseases.—Sánchez Yllades and Ramírez Mendoza report 60 cases of hemorrhagic disease, the majority in children. Special importance is given to the number of megakaryocytes in the bone marrow and of platelets in the peripheral blood, as well as to the morphologic changes of these cells in the diagnosis of hemorrhagic diseases. The number of megakaryocytes in the bone marrow and of platelets in the peripheral blood in thrombopenic purpura (including the megakaryophthisic and panmyelophthisic forms) and also in hemorrhagic leukemia is diminished. The number of megakaryocytes is increased in megakaryocytic purpura. The megakaryocytes and the platelets show morphologic changes in both the megakaryocytic and the megakaryopenic forms of thrombopenic purpura. In the various forms of hemorrhagic diatheses and purpura which are due to disorders of blood coagulability the number of blood platelets may be normal, increased or diminished, whereas the number of megakaryocytes is either normal or increased. Diminution in the number of megakaryocytes in these forms indicates aggravation of the hemorrhagic diathesis or of hemorrhagic purpura. The former include the avitaminotic, the allergic and the toxic and infectious types of endothelioses and telangiectatic and nervous purpura, whereas the latter include hemophilia, fibropenia and hypothrombinemia. The estimation of the megakaryocytes is of diagnostic and therapeutic value in the types of hemorrhagic disease mentioned.

Semana Médica, Buenos Aires

51:1061-1112 (May 25) 1944. **Partial Index**

*Steroid Hormones: Renotropic and Antiuremic Effect: Selye's Method. A. D'Angelo Rodriguez.—p. 1062.

Desoxycorticosterone Acetate in Uremia.—D'Angelo Rodríguez administered desoxycorticosterone acetate intramuscularly to several ambulatory patients with acute or subacute uremia. The drug was given in daily doses, which varied from 2 to 5 mg. The author found that the results were similar to those of Selye in experimental uremia: (1) The drug caused a progressive diminution of the amount of urea in the blood, (2) it proved to be harmless and effective when given in proper doses and (3) the arterial blood pressure of the patients was improved.

Chirurg, Berlin

15:249-280 (May 1) 1943. **Partial Index**

*Problems of Exophthalmic Goiter. E. Ljunghusen.—p. 249.
Differential Diagnosis of Diseases of Lymphatic System in Surgery. R. Herget.—p. 254.
Question of Usefulness of Adding Colloid to Fluid Blood Substitute. A. Engelhardt.—p. 259.
Local Gigantism of Leg Resulting from Congenital Anomaly of Vessels and Its Operative Removal. K. Scherwitz.—p. 263.
Küntscher's Nailing of Fracture of Forearm. R. Maatz.—p. 278.

Problems of Exophthalmic Goiter.—Ljunghusen calls attention to the fact that cases with postoperative and spontaneous thyrotoxic crises present the same aspect: rapid pulse and rise of temperature. The typical course is that of temporary hyperfunction followed by progressive destruction of the thyroid with its biologic sequels. The concept of the absorption of thyroxine from the wound and of its predominance in the postoperative course is erroneous. The curves of pulse and of temperature of two different groups of patients were compared. One group consisted of patients on whom operation was performed for exophthalmic goiter, whereas surgical removal of a simple goiter was performed on those of the second group. In general, the simple goiter is larger than the exophthalmic goiter and the surgical exposure is greater. The thyroxine content of the wound surface is larger, and consequently a larger amount of thyroxine is likely to be absorbed. However, only a slight increase in pulse and little rise of temperature was observed after the removal of a simple goiter, whereas a fulminant, postoperative crisis with severe tachycardia and hyperpyrexia occurred in cases of exophthalmic goiter in which preoperative iodine therapy had no effect. Compensatory adrenal hyperfunction is suggested as an adequate concept of the thyrotoxic crisis. Complete recovery resulted from subtotal strumectomy in cases of tuberculosis of the thyroid as well as in cases of exophthalmic goiter. This recovery, in spite of the unbiologic crippling of the organ, is considered as a link between the two processes which have so far been considered different in origin and character. Exophthalmic goiter after severe psychic trauma should not be considered as thyrogenic thyrosis but as severe and protracted stimulation of the thyroid gland and of the adrenals from the cerebrum. Thyrotropic hormone therapy in postoperative thyrotoxic crisis is suggested because the crisis may be caused by the increased thyroxine want, which cannot be met by the silenced thyroid. By this therapy the output of the remaining part of the thyroid may be increased, provided the remaining part is not too small and is sufficiently nourished. In case the thyrotoxic gland should contain a tuberculous agent, this will be found in the interstitial tissue. The thyroid of animals experimented on should be infected by the vascular route in a study to clarify the tuberculous origin of the disease. A borderline may be demonstrated where the picture of tuberculosis may be found on one side and that of toxic diffuse goiter on the other. Roentgen therapy proved successful in cases of mild hyperthyreosis and in severe cases in which operation had been omitted. The long duration of this therapy is its greatest disadvantage.

Book Notices

Textbook of General Surgery. By Warren H. Cole, M.D., F.A.C.S., Professor and Head of the Department of Surgery, University of Illinois College of Medicine, Chicago, and Robert Elman, M.D., Associate Professor of Clinical Surgery, Washington University School of Medicine, St. Louis. Fourth edition. Fabrikoid. Price, $10. Pp. 1,118, with 559 illustrations. New York & London: D. Appleton-Century Company, Inc., 1944.

Revised four times in eight years, the latest is the best edition of this book to appear. In the past few years certain basic problems in surgical physiology have become more lucid, thus making frequent revisions of textbooks more valuable. The impetus of the war is making itself felt, and when the military experience is summated and capitulated further revisions in surgical thought will be necessary.

The great problems of shock and burns are entering phases of elucidation which give great promise. The adjunct use of chemotherapy plus rest in the treatment of wounds has revolutionized this particular field. Again with our rapid transportation, tropical diseases may present increasingly grave aspects for our population.

The recent swing to plasma is an example of the cyclic trend often seen in surgical therapeutics. Plasma is, of course, one of the greatest single life saving mechanisms in the field of battle. There has been a tendency to emphasize its value and minimize to some extent the worth of whole blood transfusion. Yet recent activities on the battle fields of Europe indicate that there is a distinct advantage to the use of whole blood, even in those cases in which the choice between blood and plasma seems optional. In the light of recent experience the value of whole blood in the control of infection is not duly emphasized by the authors. An attempt to follow current trends too closely easily causes such inequalities in presentation.

In general, this book follows the format of previous editions. The illustrations are excellent; material is presented in a clear fashion which will delight the student. The book follows closely latest scientific achievements in the field of surgery as attested by an adequate and modern bibliography. There is a tendency to refer the student too frequently to the bibliography. A point may be made with regard to pulmonary atelectasis as a postoperative complication. Its significance and treatment, including bronchoscopic aspiration could be emphasized more fully. It is hoped that in future editions the authors will emulate the present standard of excellence in this textbook of surgery, which can be recommended to all students.

Urological Surgery. By Austin Ingram Dodson, M.D., F.A.C.S., Professor of Urology, Medical College of Virginia, Richmond. With contributions by R. A. Berger, M.D., F.A.C.R., et al. Cloth. Price, $10. Pp. 768, with 576 illustrations. St Louis: C. V. Mosby Company, 1944.

This book is written by Dodson in collaboration with seven other contributors. It is not a complete treatise on diseases of the genitourinary system; it is neither a textbook nor a reference book. It is, as its title implies, a book dealing with the more common surgical problems in urology. According to its authors the book was written primarily as a surgical supplement to the various textbooks on the principles and practice of urology. The book begins with a brief discussion on the surgical anatomy of the genitourinary system. This discussion is followed by several chapters on the various methods of diagnosis, preoperative and postoperative care and anesthesia in urology. The remaining thirty-nine chapters, except one, discuss the surgical management of urologic diseases. The text for the most part reads easily. The subjects appear to be well arranged, carefully balanced and fully illustrated. No pretense is made of exhaustiveness; but there is at the end of each chapter a short authoritative bibliography.

In the chapter on excretory pyelography and cystography are many excretory pyelograms illustrative of various urologic diseases. Little effort has been made to discuss the physiologic principles of excretory urography or to compare the fundamental differences between excretory urography and retrograde pyelography.

The care of the patient before and after operation should be an important part of any surgical book, and more prominence could have been given to it here. For instance, only a short discussion is devoted to shock. However, one of the important and better chapters is a discussion of acid and base balance and fluid administration. Likewise the discussion of anesthesia covers competently and concisely those principles of anesthesia which pertain to urologic surgery.

In the chapters that deal with the surgical management of the urologic diseases the author has presented the various well standardized and recognized procedures which he supplements by his experiences, and throughout this presentation he maintains a broad, impartial appreciation. For instance, in the management of prostatic hypertrophy, all three well recognized procedures transurethral resection, suprapubic prostatectomy and perineal prostatectomy are given appropriate recognition.

This book should be useful to those surgeons who have had limited training in the basic principles of urology but who from unusual circumstances are compelled to do this work.

The Diabetic Life: Its Control by Diet and Insulin. A Concise Practical Manual for Practitioners and Patients. By R. D. Lawrence, M.A., M.D., F.R.C.P., Physician in Charge Diabetic Department, King's College Hospital, London. Thirteenth edition with Wartime Supplement. Cloth. Price, $4. Pp. 228, with 18 illustrations. Philadelphia: Blakiston Company, 1944.

The author in his preface explains that the book was rewritten by pruning much dead wood and has been "ingrafted fresh" with its main object "to bring the modern treatment of diabetes by diet and insulin within the scope of the general practitioner and the understanding of the patient." The intention to aid the busy practitioner and so-called intelligent patient imposes a difficult task on the author. Manuals written essentially for the patient may relieve the busy doctor of much time consuming detail, but manuals actually of value to the physician are too technical for the patient. If the patient's doctor should disagree with certain forms of therapy advocated in the manual, he may be placed in a doubtful position vis à vis the patient perusing the manual. Unfortunately in American hospitals, where large diabetic clinics are maintained, there are thousands of diabetic patients of less than average intelligence for whom the reading of such a manual as this would be too technical and confusing. The war, with its imposed food rationing, the author rightly maintains, has posed many problems for diabetic patients, which he deals with in a wartime supplement. He has dealt with some of these problems in an excellent manner. His country has been subject to daily air raids, making the diabetic liable to special dangers —lack or omission of insulin for those whose lives may depend on it, food difficulties and the like. The section on the available food substitutes for diabetic patients requiring insulin and for those not on insulin therapy is well planned.

The author's discussion of the leak point—the relation of the blood sugar level with the appearance of sugar in the urine, and that blood sugar estimation in severe diabetes will demonstrate that "hyperglycemia . . . is not always essential," is not conclusive. But the chapters on hypoglycemia, as well as on coma, are well developed and will have great value for the average general practitioner. The chapters on recipes and food tables undoubtedly will be a great aid to the diabetic seeking to avoid a monotonous diet.

The reviewer believes that if it is possible to solve the problem of writing a manual for both the physician and the patient, Dr. Lawrence has done so. He especially recommends this manual for all general practitioners because of its simplicity, and for its abbreviated but clear exposition of the subject.

Infants Without Families: The Case For and Against Residential Nurseries. By Anna Freud and Dorothy Burlingham. Boards. Price, $2. Pp. 128. New York: Medical War Books, International University Press, 1944.

This small book, written by the daughter of Sigmund Freud and by her American colleague, is based on observations made at the Hampstead Nursery. Throughout the war period the monthly reports by Miss Freud and Mrs. Burlingham detailing their observations of their small charges and describing and commenting on the numerous psychologic and practical problems presented by a group of small children separated from their parents and subjected to London blitz warfare have been followed with deep interest by educators and child specialists. The present volume is based on material presented in these reports.

The subtitle "The Case For and Against Residential Nurseries" points to the most interesting feature of this account of child development. The authors show how, in some respects, residential care seems to offer some practical, if temporary, advantages over the care that these children would receive in their own homes, but also how those aspects of development that are dependent on the emotional relation with a mother are unfavorably influenced by institutional care. As an example, development of general muscular control is favorably influenced by the nursery setting where there is room for activity free from ordinary household hazards; but speech tends to be retarded when the direct stimulus of the mother, who communicates so directly and freely, is removed.

The authors discuss the relationship of their small charges to the other nursery children and describe their endeavors to provide children with real mother substitutes and family life in the nursery setting.

This is a most important work which certainly should be read by all who are interested in residential care of infants. It points ways toward the correction of the many well recognized inadequacies of institutional care of small children.

The Argasidae of North America, Central America and Cuba. By R. A. Cooley and Glen M. Kohls. Edited by Theodor Just. The American Midland Naturalist Monograph No. 1. Contribution from the Rocky Mountain Laboratory, Hamilton, Montana. Division of Infectious Diseases, National Institute of Health, United States Public Health Service. Cloth. Price, $2. Pp. 152, with 71 illustrations. Notre Dame: American Midland Naturalist, University of Notre Dame, 1944.

This contribution from the Rocky Mountain Laboratory of the U. S. Public Health Service is a taxonomic monograph of an important family of ticks containing the genera Argas, Ornithodorus and Antricola. The medical and veterinary importance of the work arises from the fact that it deals with the known and perhaps potential tick vectors of human relapsing fever, Rocky Mountain spotted fever and American Q fever. No less than five species of Ornithodorus are proved vectors of relapsing fever spirochetes. Argas persicus is the vector of avian spirochetosis and is a suspect as such for fowl paralysis. Otobius megnini, the spinous ear tick of cattle, also attacks man so as to require medical attention. The ticks attack vertebrates from rattlesnakes and turtles to bats and man, especially those living in burrows and nests. They are thus in ecological relations favoring their becoming vectors for parasitic infections of the blood. Twenty-five species are known from North America. Host specificity is not general. Some ticks will feed on any available host. The book contains detailed descriptions of twenty-five species of like organization. facilitating the comparison of characters of different species, with illustrations of diagnostic details and a spot map of distribution, and a list of hosts. There are also a glossary of terms, an illustrated account of characters used in classification and description and directions for the collection, preservation and study of these difficult parasites. The text is well arranged and the illustrations are clear.

Narco-Analysis: A New Technique in Short-Cut Psychotherapy: A Comparison with Other Methods: And Notes on the Barbiturates. By J. Stephen Horsley, Deputy Medical Superintendent of the Dorset Mental Hospital. Cloth. Price, $2.50. Pp. 134. New York & London: Oxford University Press, 1943.

This little book summarizes the author's experience with barbiturates as aids in the production of hypnosis. He contends that narcotic hypnosis resembles ordinary hypnosis in all essential respects. A chapter on the chemistry of the barbiturates is included. The author recounts his experiences with narcoanalysis in a mental hospital and in outpatient clinics. A few cases of war neurosis, simulation and malingering are discussed. The book thoroughly considers the technic of therapy with intravenous sodium pentothal and amytal. The theoretical chapters indicate that the author rightfully uses the treatment only as the first step and follows it with other psychotherapy and assistance to the patient in reconstructing his outlook on life. It is unfortunate that the author delayed writing this book concerning his early experience with narcoanalysis. It would have been invaluable to American military psychiatrists in their early therapeutic trials. However, the work is still up to date and should be read thoroughly by civilian and military psychiatrists.

Survey of Hospital Personnel and Facilities Made by the Canadian Hospital Council in Conjunction with the National Health Survey Sponsored by the Canadian Medical Procurement and Assignment Board. Bulletin No. 46. Paper. Pp. 32. Toronto: Canadian Hospital Council, 1943.

The report of the Canadian Hospital Council consists of three parts relating to present day conditions, postwar hospitalization and recommendations for the war and postwar periods. The first section deals with hospital capacities, occupancy and personnel. After describing briefly the hospital system of Canada it presents statistical data for 1941 showing the number and types of hospitals, classification of beds, percentage of population treated, bed/population ratios, average hospital stay, and per diem costs. With this background it is further shown that the average wartime increase in bed capacity for the civilian hospitals of Canada was 10.4 per cent by January 1943. In the same period, however, the average daily census increased 18.9 per cent, or nearly twice the increase in hospital beds. Changes in personnel of all types are reviewed, including replacement problems, additional emergency care, sharing of personnel and facilities, utilization of miltary personnel, technical training and the possible expansion of hospital services for military needs.

The second part, dealing with postwar hospitalization, reports additional needs for the care of the incurable and chronically ill, the senile, mental patients, communicable diseases and convalescent patients, as well as further facilities for general hospital service. This embraces also a discussion of hospitalization in rural areas, the possible development of hospitals as health centers and the need for a commission on hospitalization to coordinate the planning and expansion of hospital facilities in accordance with the requirements of individual areas.

Part three contains a list of twenty-seven recommendations set forth by the National War Labor Board and the Canadian Hospital Council. These concern wages and other financial problems, conservation of personnel, exchange services, postwar training courses, establishment of additional hospital facilities, coordinated planning, integration of hospital and diagnostic services, development of health centers and various other items. The report is a careful analysis of hospital problems in Canada and will be of interest to all who are concerned with the development and maintenance of adequate hospital service in the coming years.

Practical Malaria Control: A Handbook for Field Workers. By Carl E. M. Gunther, M.D., B.S., D.T.M., Field Medical Officer, Bulolo Gold Dredging Limited, Territory of New Guinea, at Present with the Australian Medical Corps. Foreword by Prof. Harvey Sutton, O.B.E., M.D., F.R.A.C.P. Fabrikoid. Price, $2.50. Pp. 91. New York: Philosophical Library, Inc., 1944.

Although this handbook for malaria control has appeared only recently, it contains many recommendations that disagree with the opinion of authorities on the subject. There is nothing in the text that reflects the vast experience that has accumulated throughout the world since the beginning of the present war. For example it is stated that it is usually possible in most cases to eliminate malaria from the system by an intensive course of treatment. One of the major problems presented by this war has been the impossibility of eradicating the large volume of vivax malaria in spite of all intensive antimalarial therapy with either quinine or atabrine in the epidemiology of the disease. It is stated as a fact that there is a local increase in virulence following introduction of the nonimmune into malarious areas. This lacks any clinical or experimental proof; although it may possibly occur, the burden of proof remains with the proponent. There is another reference that the presence of any stock will usually divert most of the mosquitoes. Such a statement can only mean that the author is unfamiliar with substantiating studies on the biting proof of certain malarial vectors as well as repeated investigations which have demonstrated the inability to control malaria transmission by animal barricades. For control, the use of surface feeding fish in permanent waters is given the preference of first importance. Again this is not in conformity with current opinion. Although there is much information of value in the text, it offers no improvements on the available treatises on the subject; since it contains some misinformation, it cannot be given an unqualified recommendation for general use.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

SENSITIVITY TO ANESTHETICS

To the Editor:—**Is there any acceptable test for determining whether a patient may be sensitive to procaine hydrochloride injected into the spinal canal for anesthesia?** **M.D., New York.**

To the Editor:—**While taking ether, a child aged 5, in good health except for chronically infected tonsils, broke out with a widespread urticaria. The lesions appeared shortly after the anesthetic was begun, i. e. within five minutes. No preoperative medication had been given. Within ten minutes after the injection of 3 minims (0.18 cc.) of epinephrine the urticaria disappeared. Is the reaction to be expected if the child takes ether again? Is the reaction of a serious nature?** **M.D., Nebraska.**

ANSWER.—1. There is no generally accepted test to prove definitely that a patient will be sensitive to procaine injected into the spinal canal to produce anesthesia. However, there is a test which can be used which will indicate that the patient may be sensitive to procaine. The test is carried out as follows: The patient's back is exposed. Uncolored alcohol is used as an antiseptic and is applied gently. A 1 per cent solution of procaine hydrochloride without epinephrine is prepared. A syringe and wheal needle also are prepared. Isotonic solution of sodium chloride is similarly prepared with another syringe and wheal needle. One cubic centimeter of isotonic solution of sodium chloride is injected to form a skin wheal, and the reaction of the patient both locally and systemically is noted. After a few minutes (five) another wheal is raised with 1 cc. of the 1 per cent solution of procaine hydrochloride without epinephrine at a distance of 2 or 3 inches from the wheal raised with the salt solution. Again the patient is observed for symptoms of sensitivity either locally, systemically or both. If the patient shows no local difference between the wheals and is undisturbed by the injection, the probabilities are good that the drug may be used intraspinally without producing any further evidence of sensitivity. Conversely, if the patient shows no reaction to the wheal raised with the salt solution but does show a local reaction, particularly redness of the wheal that was raised with procaine, and if there are signs of dyspnea, apprehension and rapid pulse with or without a fall in blood pressure, it may be assumed that the patient is sensitive to procaine and that this agent should not be used as a spinal anesthetic.

There is considerable disagreement concerning the testing of patients for drug sensitivity. It is but rarely that the anesthetist observes symptoms during spinal anesthesia which he feels are due to sensitivity of the patient to procaine used intraspinally.

2. Blotching of the skin as a reaction with ether anesthesia is rather common in children. It usually is only temporary and is never serious. The probabilities are that if the child is given ether anesthesia again the same reaction will occur, but it is not a serious matter. Real urticaria from ether is unusual but is not serious, as was demonstrated in this case.

ALLERGY TO COLD

To the Editor:—**A boy aged 11 has a deviated nasal septum. When exposed to the least chill, as from an electric fan, he gets a stuffiness in the nose, followed often by a cough. The chest is normal except for a few localized sibilant rales, which clear up on coughing; I have used the usual nasal drops and sprays. His condition is not seasonal; he does not have asthma. What treatment is advised? Should an operation on the septum be performed? If so at what age? Is there a chance that the septal condition will improve as the child grows older?** **M.D., Alabama.**

ANSWER.—There is reason to believe, because of the sensitivity to cold, that this patient is basically allergic even if there is no evidence of pollinosis or asthma. Septal deviations are not likely to cause the symptoms mentioned, and an operation would not be apt to help matters. Further studies should be made to prove the presence of an allergic state. Nasal smears should be examined for the presence of eosinophils; when found in number they are pathognomonic. If on examination no secretion is present, cotton plugs should be placed in the nares for a short time to excite a flow, so that a suitable smear may be made. From the history as given, it seems unlikely that there will be found a sensitivity to food or even inhalants; the sensitivity is probably not to heat or cold per se but to the change in temperature.

Contrast baths, such as alternating hot and cold showers, are one important method of treatment. If this is considered too drastic the patient may gain tolerance by rubbing an increasing area of the body surface with ice for a few minutes daily. Some observers have obtained good results by increasing doses of histamine injected twice daily for two weeks and once a day for another two or three weeks.

Reference:

Feinberg, Samuel M.: Allergy in Practice, Chicago, Year Book Publishers, 1944.

ADOPTION AND FERTILITY

To the Editor:—**It is often said that a sterile married couple tends to become fertile after adopting a baby and that repeated pregnancies tend to ensue. Do the records of specialists and of clinics dealing in sterility bear out this dictum? Do they shed any light on its mechanism? For example were the mothers' menstrual and ovulatory cycles recognizably abnormal during the sterile early years of marriage; were the fathers' sperm recognizably abnormal, and the like? Do they point to indications for advising patients to adopt a baby? Hypothalamic pathways may be involved in the endocrine phenomena that have been studied in cases of so-called freshman amenorrhea, in which luteinizing gonadotropic factors of the pituitary are suspected to be inhibited. Can similar mechanisms be demonstrated in cases of some of these babyless sterile marriages?** **M.D., Wisconsin.**

ANSWER.—Statistical studies comparing the incidence of pregnancy among previously sterile women who adopt children with the incidence of pregnancy among previously sterile women who do not are not available. If they were, they would probably show that the incidence of pregnancy in the two groups is the same. If a woman who has been sterile for some years adopts an infant and subsequently becomes pregnant, it strikes every one as a startling event and is long remembered. On the other hand, if the same woman had not adopted an infant and had become pregnant, the occurrence would be much less dramatic and few people would pay much attention to it. Unless evidence can be advanced to the contrary, it would seem likely that the purported tendency of sterile women to become pregnant following adoption of an infant is based not on fact but on the overemphasis which such cases receive. There is no factual evidence bearing on the relationship between the hypothalamic pathways and sterility.

INJECTION TREATMENT FOR VARICOCELE—VOLUNTARY HYPERVENTILATION WITH ALKALEMIA

To the Editor:—**Are sclerosing agents used for the obliteration of a varicocele? Please refer me to technic. What are the complications? In the acute hyperventilation syndrome of the hysterical type I have found that breathing into a paper bag dramatically relieves the pain and spasm. Has this been reported before? I have been unable to find any reference in the literature available to me and want to report my case.** **A. M. Winter, M.D., New York.**

ANSWER.—The injection treatment of varicocele is fully described in the monograph of Penn Riddle (Philadelphia and London, W. B. Saunders Company, 1940, p. 231). The most important point about varicocele is that it should be left alone unless it produces dragging pain in the testis or low back pain. Many neurotic persons suffering from a moderate degree of varicocele would be much better off if left alone. They can and frequently do develop a severe sexual neurosis.

Voluntary hyperventilation which may lead to alkalemia and tetanic contractions has been treated by ammonium chloride (Kerr, W. J.; Dalton, J. W., and Gliebe, P. A.: Some Physical Phenomena Associated with the Anxiety States and Their Relation to Hyperventilation, *Ann. Int. Med.* **11**:961 [Dec.] 1937). Rebreathing from a bag increases carbon dioxide in the blood and this counteracts alkalemia as long as the patient is unable to blow off the excess carbon dioxide.

DIETHYLSTILBESTROL AND MALE HYPERSEXUALITY

To the Editor:—**I read in Queries and Minor Notes in the July 8 issue of The Journal, page 760, the problem submitted by George L. Kennedy, M.D., of Faribault, Minn., concerning the use of diethylstilbestrol in male hypersexuality. An article of mine entitled "Diethylstilbestrol in the Management of Psychopathological States in Males (1) Preliminary Report" was published in the *Journal of Nervous and Mental Disease* (99: 928 [June] 1944). Dr. Kennedy's problem is apparently similar to my own. For approximately eighteen months a study has been in progress at this hospital, and the article mentioned constitutes the preliminary report of this study.** **Robert M. Foote, M.D., Fort Worth, Texas.**